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Public Health.

THE report of the Royal Commission on Health is so important a document that we have determined to reproduce it *in extenso*. For this purpose it has been necessary to exclude original articles from this issue.

REPORT OF THE ROYAL COMMISSION ON HEALTH.

INTRODUCTION.

To His Excellency the Right Honourable JOHN LAWRENCE, BARON STONEHAVEN *et cetera.*

MAY IT PLEASE YOUR EXCELLENCY:

We, the Commissioners appointed by Royal Letters Patent to inquire into and report upon public health as a matter for legislation and administration by the Commonwealth, in conjunction with the States where necessary, and more particularly with respect to—

- (a) the coordination of medical services of Commonwealth Departments in regard to all matters affecting public health;
- (b) the cooperation of Commonwealth and State health authorities;
- (c) the prevention of the outbreak, development or spread of disease in the Commonwealth;
- (d) the prevention of venereal disease and the exercise of control over and the treatment of persons suffering from venereal disease;

(e) uniform legislation with regard to purity of food and drugs;

(f) maternity hygiene and child welfare;

(g) industrial hygiene;

(h) the encouragement and development of research work;

(i) the relationship which should exist between public health authorities and medical practitioners in regard to the prevention of disease;

(j) the relationship which should exist between public health authorities and other public authorities rendering medical services; and

(k) the publication of information relating to matters concerning public health,

have the honour to report as follows:

The matters referred to us for inquiry and report have involved an examination of the legislation and administration with respect to public health by the Commonwealth and States, including the activities of local authorities and also of voluntary associations and other bodies in the various States dealing with important modern developments in preventive medicine not covered by present health legislation.¹

In addition we have given consideration to many official memoranda and reports on the various subjects of inquiry and have had numerous conferences with respect to evi-

¹ Here follows a record of persons from whom evidence was taken, the places at which the Commission sat for the purpose of hearing witnesses and the institutions visited by the members of the Commission.

dence taken and concerning the principles which have governed our decisions.

Several of the headings of the reference embrace a large number of matters and they are therefore subdivided into subjects which are considered separately in this report.

The principal subjects are dealt with in the order set forth in the reference, but they overlap and are interwoven to a considerable extent.

I.—ILL-HEALTH IN THE COMMONWEALTH.

In an inquiry into public health it seemed to us advisable, in the first instance, to make an investigation as to the extent and character of ill-health in the Commonwealth.

1. The Medical Officers of the Education Departments in the different States stated that nearly all children need attention for dental defects and that large numbers have nose and throat disease and other defects or are below standard either physically or mentally. Records obtained as a result of medical examinations for military purposes showed that a large number of both the adolescent and the adult male population was below first class standard. In the cadets annually examined from 1912 to 1920 8% to 12% were rejected as unfit and in the annual examination for the citizen forces from 1912 to 1925 from 13·76% to 29% were rejected. Of the men examined for service abroad during the war 33·9% were rejected. Of single men between the ages of twenty-one and thirty-five called up for medical examination by the proclamation of 1916 42% were rejected.

2. An attempt was made to obtain detailed figures as to the causes of such low standards and as to the extent and causation of ill-health in the general population, but it was impossible to gain exact information, because neither State nor Commonwealth administrations had developed machinery for the purpose.

The various State Statisticians who were examined, said that comparatively little information could be given by them on this subject, because it had not been regarded as within their field of activities. Even in regard to infectious diseases, the Commonwealth Statistician stated: "The main vital statistics of importance are those which we do not collect because ours relate only to deaths." The Commonwealth and States of Australia Conference on Industrial Hygiene, Sydney, 1922, stated: "Proper inquiry into the conditions under which the industrial classes carry on their occupation is always hampered by the lamentable lack of statistical evidence of the sickness experience of the workers engaged. No statistics exist of the sickness experienced by the community at large corresponding to those of mortality." The Commonwealth Royal Commission on National Insurance, 1924-1925, endeavoured to obtain statistics as to morbidity in the Commonwealth, but did not succeed. The Commissioners stated: "The records of sickness experience of friendly societies would be of considerable value if a comprehensive system of statistical tabulation and analysis were instituted; the records are now kept mainly for financial purposes, but they present a wide and valuable field for investigation as to morbidity."

Dr. D. G. Robertson in his evidence to us quoted from the *Commonwealth Year Book* some figures as to sickness of members of friendly societies which are of some use, but even these are incomplete, as no statistics are supplied by New South Wales and no information is given as to the causes and nature of these sicknesses. Dr. Robertson furnished the results of investigations made by the Commonwealth Department of Health into the sickness experience of 95,244 employees in various Government Departments and also of a few private industries and some dividing societies. The Colonial Mutual Life Assurance Society has also collected some information as to the sickness of its insured members. These investigations afford some indication of the character and extent of sickness in sections of the population, but cannot be taken as an index of the morbidity in the whole Commonwealth. From the figures he had been able to collect and analyse, Dr. Robertson drew the definite conclusion that "there is an enormous national waste. . . . From the data available

it is no exaggeration to claim that at least six days *per annum* are lost on the average by the breadwinners in Australia—on every working day at least 2% of the workers are absent through sickness—an analysis shows that a large percentage of the sickness is due to preventable causes."

In this connexion the Pensions Branch of the Treasury should be able to provide valuable information. While it was possible to obtain in evidence the exact number of invalid pensioners, namely 42,617, the only information available as to the causes of such invalidity was that contained in an "Analysis of the Causes of Invalidity in Respect of Claims from 1910 to 1915," issued as *Quarantine Service Publication No. 10*. The usefulness of such an analysis is shown by the following statement in that publication: "Many pensioners are being paid on account of disease which with proper measures is preventable." But nothing further has been done.

The evidence of the Commonwealth Statistician indicated that valuable material on the subject of morbidity which is now not used, might be made available. For instance, information could be obtained from records that might be collected by friendly societies, charitable institutions, industrial organizations and others.

3. Under a later reference we shall deal with the relationship of medical practitioners to the prevention of disease, but we would observe at this stage that members of the medical profession are in possession of a great deal of useful information as to the incidence and causation of disease which is not at present available to statisticians or health authorities. Members of the medical profession sign death certificates and notify certain diseases and in Western Australia furnish annual reports of cases of tuberculosis. It has been suggested that they should furnish particulars of all cases of illness that they attend or at least of such as the health authorities deem necessary.

4. In Western Australia the State Statistician receives reports from hospitals and friendly societies which include particulars of causation of disease. This improved procedure is partly due to the Statistician also being Registrar-General for Births and Deaths and Registrar of Friendly Societies, but it is also partly due to the close association which existed years ago between the State Health Department and the Statistics Department. The procedure followed in Western Australia might with advantage be adopted by other States.

5. Exact and complete knowledge in regard to morbidity is of fundamental importance in any inquiry or in any administration in regard to public health and we are of opinion that the information indicated should be obtained. Certain increases in staff and in expenditure would be required by the Commonwealth Statistician, but they would not be great and would be completely warranted by results.

In England the same difficulty and need have been felt for many years. As long ago as 1872 Dr. Farr, Registrar-General, said in his *Thirty-Fifth Annual Report*:

The reports of the existing medical officers are of great practical value and will become more valuable every day. What is wanted is a staff officer in every county or great city with clerks to enable him to analyse and publish the results of weekly returns of sickness to be procured from every district. . . . The thing to aim at ultimately is a return of the cases of sickness in the civil population as complete as is now procured from the Army of England. It will be an invaluable contribution to therapeutics as well as to hygiene, for it will enable the therapist to determine the duration and the fatality of all forms of disease under the several existing systems of treatment in the various sanitary and social conditions of the people.

In a recent official publication on this subject, the following statement is made (referring to England and Wales):

At the present moment there is no established system for the regular collection and tabulation of cases of sickness other than for infectious diseases, but the steps already taken among hospitals and other institutions,

combined with the special research efforts of public health workers, give ground for hope that the detailed collection of medical statistics of general sickness will ultimately be realized.

We are of opinion that the stage has been reached in our national development when the Commonwealth should exercise to the full the powers given to it with regard to statistics and should arrange for the collection and classification of statistics of morbidity. The records of medical examinations by school medical officers, of examinations of cadets and other special records would afford most valuable information from the public health aspect if fully analysed, classified and tabulated. We are of opinion that to do this satisfactorily the services of a statistician who is a medical practitioner, are essential. Dr. Harvey Sutton, Principal Medical Officer in the Department of Public Instruction, New South Wales, said in evidence: "In England they have Dr. Browne in the Statistical Department, who has been able to provide most valuable statistics. This work is quite outside the range of the ordinary statistician who collects vital statistics. I think the time is ripe in Australia when a medical man should be appointed in the Statistical Department who really appreciates the value of causative influences. The present statistics do not give you the full value in the study of causation. I think any one who has anything to do with statistics, will agree with me in that regard."

Recommendations.

We recommend that—

- (1) Standardized statistical investigations into the extent and character of morbidity in the Commonwealth should be instituted and maintained.
- (2) Definite and formal cooperation should be established between the Statistician and the Health Department by associating a medical officer of the Commonwealth Department of Health with the Commonwealth Statistician's office to supervise the collection, tabulation and analysis of morbidity, mortality and other vital statistics.
- (3) Legislation, where necessary, should be enacted to provide that such statistics as are required shall be furnished by Government Departments, friendly societies, industrial and other bodies such as public hospitals and by medical practitioners to the Commonwealth Statistician.

II.—MEDICAL SERVICES OF THE COMMONWEALTH.

1. The first particular reference in our Commission is "(a) The coordination of medical services of Commonwealth Departments in regard to all matters affecting public health."

The evidence we have taken showed that the medical services are distributed among several Departments and under various Ministers. No single witness was able to give a complete authentic list of the whole of the medical services, but the following table approximately shows the position:

2. The evidence showed that each medical service is quite distinct and is practically a water-tight compartment. While there is no systematic or routine coordination between the services, they mutually assist and cooperate with each other to some extent. For instance, the Director-General, Army Medical Services, advises the Air Force Medical Services. The Department of Health loaned Dr. Cilento to the Home and Territories Department to organize medical services in New Guinea. The Treasury permitted the Department of Health to make an analysis of medical records with regard to invalid pensions. The Repatriation Department cooperated with the Department of Health in regard to inquiries as to bilharziosis and in dealing with tuberculosis and with State Departments in treating mental cases and providing hospital accommodation. On the other hand lack of cooperation also exists. For instance, the Medical Officers of the Defence Department through their annual medical examinations of cadets and citizen forces for many years have been obtaining information which would be useful to health administrators, but the information has not been made available for this purpose. This is also true of the information obtained in the medical examinations for invalid pensions. As has previously been pointed out regarding morbidity statistics, the requirements of health administrators have not always been recognized by other departments. Some of the want of cooperation in matters affecting health has arisen from the fact that the Department of Health of the Commonwealth was established subsequently to the other Departments.

3. The Medical Services may be grouped into those of the Civil, the Defence and the Repatriation Departments.

(a) Medical Services of Civil Departments.

The evidence we have taken showed that all the civil medical services could be coordinated by placing them

Department.	Number and Character of Medical Officers.	Minister.
Defence—Navy	19 permanent 36 auxiliary	Defence
Army	1 permanent whole-time 194 militia part-time 38 unattached 1,624 reserve	
Air	2 whole-time Examiners and specialists (paid by fees)	
Repatriation	44 whole-time 90 part-time	Treasurer
Health	32 whole-time 49 part-time Quarantine Officers 2 whole-time Post Office and Public Service ¹	Health
Home and Territories	Federal Capital, 1 whole-time Northern Territory, 2 whole-time ² Norfolk Island, 1 whole-time Papua, 5 whole-time New Guinea, 9 whole-time ³	Home and Territories
Treasury—Pensions	Examiners (paid by fees)	Treasurer
New Guinea	Expropriation Board, 1 whole-time	
Prime Minister—High Commissioner and Migration	1 whole-time ⁴	Prime Minister
Works and Railways	2 part-time ⁵	Works and Railways

¹The two officers are officers of the Health Department. ²One acts as Quarantine Officer as well. ³Dr. Cilento is loaned by Health Department to act as Director of Health in New Guinea. ⁴In London. ⁵Advisory to the Commission on medical matters, examination of applicants for employment and testing employees as to vision and hearing *et cetera*; also medical officers to a railway medical fund.

under the Minister for Health and under the supervision of the Department of Health.

Apart from the Department of Health itself, the problems of these medical services present themselves under various aspects:

(a) *Territorial Administration.*—This includes the medical services of the Federal Capital Territory, Northern Territory, Papua, Norfolk Island and the mandated territories. The medical officers in these services are all whole-time officers acting as health officials. They are in most cases controlled by the Home and Territories Department, hence where there is only one medical officer, as in Norfolk Island, he is not in official relationship with any other medical officer. But the close interrelation of these services with the Department of Health is shown by the fact that one such officer in the Northern Territory acts as Quarantine Officer, by the laboratory at Rabaul being under the Department of Health and by the loan of Dr. R. W. Cilento from the Department of Health to reorganize the medical services of New Guinea. As health officials these medical officers should have the same training and status as other medical officers of the Commonwealth Department of Health.

We are of opinion that the Commonwealth Department of Health should directly control all the territorial medical services and that the medical officers of these services should be on the staff of that Department. One advantage of such an arrangement would be that the medical officers would have more opportunities of transfer and promotion and the service would then be attractive to a larger number of medical practitioners of good capability and training who would make public health their permanent work, and the service would be more efficient in consequence.

(b) *Departmental Administration.*—This includes the Pensions Branch of the Treasury, the Postmaster-General's and other departments. The medical services of the Pensions Branch are performed by many part-time medical referees who are paid by fees. They are under no medical supervision and, as has been pointed out, no use is made of the medico-statistical information obtained by them.

The remaining medical services consist mainly of the medical examination of entrants to the Commonwealth Public Service, the reexamination of officers for extended sick leave and the supervision of conditions of work, although the last has been very little developed. In the Postmaster-General's Department a whole-time medical officer has for some time been employed in Sydney. This officer has recently been transferred to the Department of Health; his duties have been extended to all sections of the public service and a similar appointment has been made in Melbourne. The medical examination of entrants to the public service is made in practically all cases by medical practitioners specially appointed for the purpose. Certain of the medical officers in the larger centres are paid a small retaining fee and in all cases except the two whole-time officers in Sydney and Melbourne above-mentioned the fee paid by the candidate is retained by the medical officer.

The Commonwealth is becoming a large employer of labour and the services of the experts in the Industrial Hygiene Division of the Health Department should be officially utilized in supervision of the health and working conditions of all Commonwealth employees. In this way a standard would be set for other employers. Further, in the Commonwealth Railways in connexion with the new railways that are being planned, there will be need of expert sanitary supervision. We are of opinion that all the medical services required by the various Departments of the Commonwealth should be performed by officers, whole-time or part-time, as the case may be, under the supervision and control of the Department of Health, not only on the ground of economy and efficiency, but because the information acquired by such officers could then be collated by the Department of Health and made available for dealing with the subject of the prevention of disease in the community.

4. The Commonwealth Medical Officer attached to the High Commissioner's Office in London is under the Prime

Minister. His chief work is in connexion with the medical examination of migrants which is under the Minister for Migration. He also has certain important duties in connexion with the Department of Health and all his duties are concerned with health. In our opinion, he should be under the Minister for Health.

Recommendations.

We recommend that—

- (1) The health administration of the Federal Territories (including Northern Territory, the Capital Territory, Papua, Norfolk Island and the Mandated Territories for New Guinea and Nauru) should be placed under the Commonwealth Department of Health.
- (2) All work for which the services of medical practitioners are required by the Commonwealth in any civil, as distinct from Defence and Repatriation administration, should be performed by medical officers who should be either permanent whole-time or temporary whole-time or temporary part-time officers as may be found advisable of the Commonwealth Department of Health.
- (3) The present arrangement regarding the Commonwealth Medical Officer at Australia House, London, should be altered and that the Principal Medical Officer in Great Britain should be an officer of the Commonwealth Department of Health, whose duties should include—
 - (a) the control of the medical examination of intending migrants to Australia from Great Britain—with power to select the medical referees;
 - (b) the supervision of any arrangements which may from time to time be made for the medical examination of intending migrants from Europe;
 - (c) acting as medical representative of the Commonwealth in all international health and quarantine questions, including those relating to animal and plant quarantine;
 - (d) taking steps to insure that the Commonwealth Department of Health is promptly informed of all matters affecting or likely to affect health or quarantine administration in Australia;
 - (e) regularly supplying the Commonwealth Department of Health with authoritative information in regard to health and disease;
 - (f) advising with respect to any medical questions which may be referred to him by the High Commissioner or the Director-General of Health under the *Commerce Act* or under any legislative enactments dealing with food or drugs;
 - (g) acting as adviser to the High Commissioner, London, on medical and health matters.
 - (h) carrying out other duties as the Director-General of Health may from time to time require.

(b) Medical Services of Defence Department.

The evidence concerning the Medical Services of the Defence Department was somewhat contradictory. The Naval Medical Services, according to Surgeon-Commander Gayer-Phipps, Director, Naval Medical Services, must be kept separate and distinct owing to their special organization and requirements and particularly the relation of the Australian to the British Navy. With this view Major-General Fetherston formerly Director-General, Medical Services, and Dr. Cumpston, Director-General of Health, agreed. On the other hand, Major-General Barber, the present Director-General, Medical Services, Lieutenant-Colonel T. E. V. Hurley, Assistant Director, Medical Services (temporarily carrying out the duties of Director-General, Medical Services), Colonel Maguire, Deputy Director, Medical Services, New South Wales, and Colonel J. A. Dick said a scheme of coordination and even of

complete amalgamation was possible. Colonel Maguire put the case as follows: "As far as the treatment of the sick is concerned there is no difference whether a man belongs to the Naval, Military or Air Forces; he is treated in the same way. From an administrative point of view, while the three services might be combined, there are considerable difficulties in regard to each. The technical administration of each arm of the service is so different that it would be necessary to have three separate technical services. The main advantages of fusion of the services would be economy and economical distribution of personnel. . . . During peace time the Naval, Military and Air Forces could be easily administered by one head, but in war time it would be a different matter." Lieutenant-Colonel T. E. V. Hurley in his evidence said that at a conference held in 1922 an agreement was reached for a common medical service for the three branches. A copy of the report of that conference was furnished to us. It was signed by Sir Neville Howse, Director-General, Medical Services, Surgeon-Commander Eames, Director, Naval Medical Services, and Squadron-Leader A. P. Lawrence, Senior Medical Officer, Air Services; it recommended a single service. Major-General Barber, Director-General, Medical Services, in his evidence said he had drawn up two schemes, one for coordination and the other for amalgamation of the Navy, Army and Air Medical Services. Amalgamation meant that there would be one service. Coordination meant keeping the three services distinct. The following is his scheme for coordination:

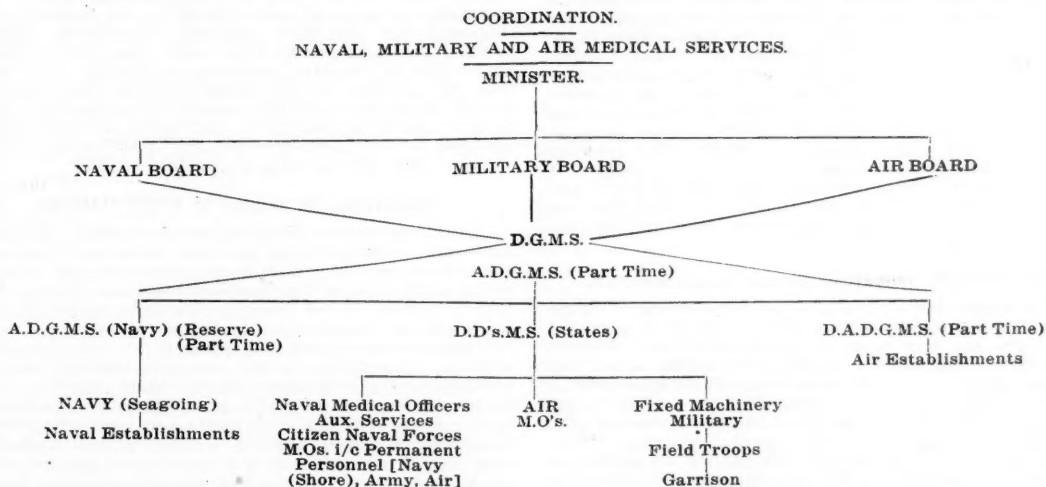
We agree with the opinion of Dr. Courtney that all whole-time medical officers of the Commonwealth should have uniform status, pay and conditions, but it is doubtful if any advantage would be gained at the present time by transferring the Repatriation Medical Services to either the Defence Department or the Department of Health.

Suggestions have been made that a consultative board, consisting of the Directors of the Medical Services of the Defence, Repatriation and Health Departments, should be instituted to devise methods of cooperation between these services in matters concerned with public health in which all or more than one are interested. Such a board could render valuable services. It could, for instance, arrange for securing records of unfit recruits and the effective after-attention of the cause of unfitness, and for the compilation of statistics; it could also deal with questions of hygiene in the Defence Services. The protection of the civil population from the effects of gassing in possible enemy air raids in time of war is a matter that was brought to our notice and is one requiring immediate attention. We have not been able to consider it, but suggest that such a board as we propose might take some initiatory steps in the matter. It should meet at stated intervals, and elect its own chairman.

Recommendations.

We recommend that—

- (1) The Medical Services of the Repatriation Department should remain as at present.



Three of our members (Sir George Syme, Dr. Hone and Dr. Todd) have, when members of the Federal Committee of the British Medical Association in Australia, considered the question of a single medical service for all the Defence Forces and agreed with the resolution of that Committee of February 9, 1922, to the effect that there should be one medical service to provide for the needs of the Navy, the Army and the Air Force.

Having carefully considered the evidence and especially that of Surgeon-Commander Gayer-Phipps, we are all of opinion that the scheme for coordination submitted by Major-General Barber, Director-General, Medical Services, is preferable to that for amalgamation and is both practicable and advisable, provided that the subdirector of each service shall have power to act independently should emergency arise.

(c) Medical Services of Repatriation Department.

The Medical Service of the Repatriation Department is somewhat peculiar. The Repatriation Commission is under the control of the Treasurer, but although the ex-soldiers are no longer under the control of the Defence Department, it is very advisable that the medical officers dealing with them should have had military experience.

- (2) The Medical Services of the Army, Navy and Air Force should be coordinated under one Director-General with subdirectors in each Branch keeping the three services distinct.
- (3) A consultative board should be established, consisting of the Director-General of the Defence Medical Services, the Director-General of Health and the Principal Departmental Officer of Repatriation to devise methods and means of cooperation between these medical services.

III.—COOPERATION OF COMMONWEALTH AND STATE HEALTH AUTHORITIES.

The Constitutional Aspect.

1. The second particular reference in our Commission is "(b) The cooperation of Commonwealth and State Health Authorities." This reference seems to us to imply that the respective functions of the Commonwealth and State Health Authorities should continue as at present, but, as several witnesses have expressed the opinion that the Constitution should be amended in order to give the Commonwealth general legislative powers in regard to health, we feel called upon to consider the question as to the extent to which public health should be, in the

general terms of the reference, "a matter for legislation and administration by the Commonwealth." Under the Constitution Act the Commonwealth has no general legislative powers in relation to health apart from quarantine. Under some of its other legislative powers, however, it can pass legislation having a bearing on health. It can, for example, legislate on migration, trade and commerce, census and statistics, marriage and divorce, invalid and old-age pensions. It can also enact legislation providing for the expenditure of public funds upon purposes considered to be for the welfare of the public which has hitherto been accepted as including health.

General powers to legislate on health could be conferred on the Commonwealth by amendment of the Constitution through referendum or by the States voluntarily surrendering their powers by Acts of State Parliaments. If such powers were conferred by either of these methods, a Commonwealth Ministry of Health could then be established which would control all services relating to health in Australia, just as the Ministry of Health controls them in Great Britain.

From our own experience and investigations while visiting all the States, we recognize that in a country so large, so diverse in climatic and other conditions and so sparsely populated as Australia, a Commonwealth Ministry of Health similar to that of Great Britain could not effectively carry out its functions except by devolving its powers on local authorities in the several States. As many services in connexion with health are under State Local Government Acts, difficulty would be likely to arise as a result of such devolution of powers and we do not recommend that any action be taken by the Commonwealth to obtain general powers to legislate on health, unless approached by the States as provided by the Constitution.

Having come to this conclusion, we made an examination into the possibilities of cooperation between Commonwealth and State health authorities under present constitutional conditions. This examination showed that cooperation had taken place and had increased year by year; it revealed that failure to cooperate had also occurred and indicated further some of the causes of failure and the lines along which better cooperation could be brought about in the future.

International Obligations of the Commonwealth.

3. The emphasis on quarantine as the sole general power of the Commonwealth with regard to health has tended to obscure the fact that constitutionally the Commonwealth is the medium for dealing with health authorities overseas and that as a signatory to the Paris International Sanitary Convention of 1912 and the Treaty of Versailles and as a member of the League of Nations it has accepted international obligations with regard to health. These include the duty of forwarding information on matters of international concern for the prevention or the control of disease. For the supply of such information the Commonwealth is at present dependent on the voluntary assistance of the States. The information required has generally been supplied, but delay has sometimes occurred before it was given and occasionally it has been insufficient. This has been due in some instances to the State authorities not fully realizing the obligations of the Commonwealth or in others to the powers of the State Health Departments being limited by their own statutes, while at times as in the outbreak of plague in 1921 political considerations have been responsible. The first of these difficulties can be overcome by the appointment of the health council we suggest later on; the second we will consider under reference (c) ("The prevention of disease"); the third will be liable to recur if public health is subordinated to political exigency. In our opinion the Commonwealth should have power to enact any legislation necessary to enable it to carry out its above-mentioned international obligations.

Cooperation in Regard to Quarantine.

4. The constitutional powers of the Commonwealth with regard to quarantine were exercised by the passing of the Quarantine Act 1908. In the years immediately following cooperation took the form of the State Departments of Health carrying out the provisions of the Quarantine Act

under the direction of the Director of Quarantine, the Chief Medical Officer of the State Department of Health acting as Chief Quarantine Officer in the State concerned. The State Governments were paid a certain sum for the services of the officers carrying out the work. Similar arrangements were made with respect to animal and plant quarantine and these with certain modifications are still in existence. Evidence before the Commission showed that with regard to animal quarantine the Commonwealth could now be of greater assistance by providing an expert in veterinary science at the head of a Veterinary Quarantine Division of the Commonwealth Department of Health who among other duties could advise its officers in the States. As these officers at present are also State officials, such an arrangement would be an extension of cooperation between the Commonwealth and States.

The system under which officers of the State Health Departments carried out quarantine work has (except in the case of Tasmania) been discontinued for some years. The Act is now administered so far as human or general quarantine is concerned, by a permanent Commonwealth officer and staff stationed in each State (except Tasmania) as a branch of the Commonwealth Department of Health. Consequently, cooperation has since had to proceed on different lines and on the whole it has been successfully maintained. It has, however, failed under the stress of epidemics as in that of smallpox in 1913, influenza in 1919, and plague in 1921. Although the Commonwealth Quarantine Act has now been amended by the introduction of a provision which will diminish the danger of a recurrence of some of such difficulties, the necessity still continues for the most complete cooperation possible between the Commonwealth and the State health authorities in times of threatened epidemics. We think that the position of the Commonwealth Department of Health in regard to the performance of its functions would be more clearly defined if the Quarantine Act were further amended by the addition to Section 11 at the end thereof of the words "and in promoting public health."

Cooperation in Regard to Other Matters.

5. In those matters affecting health of which the States have sole control evidence has been submitted that a considerable degree of cooperation has existed between the health authorities of the Commonwealth and States. They have combined in an investigation into hookworm over the whole of Australia and in promoting measures for its eradication where found to be present. They have similarly acted in cooperation in the campaign against venereal diseases, by the Commonwealth providing subsidies to the States for expenditure on venereal disease. Conferences of Commonwealth and State health and other officials have been held to devise uniform legislation and regulations with regard to purity of food and drugs and to devise measures for uniformity in the action to be taken against tuberculosis. While these and other conferences have been of considerable value, great delay has frequently occurred in giving effect to their recommendations. In some instances the recommendations have not been fully carried out.

The Commonwealth Department of Health has also cooperated with State Departments in the fields of industrial hygiene and sanitary engineering, by providing experts in these subjects, who have advised health and municipal authorities in various States in regard to particular problems. It has also instituted laboratories which have been of great assistance not only to State health authorities but to members of the medical profession in their activities in preventive medicine. Further reference to laboratories will be made under reference (c) ("The prevention of disease").

Extension of Existing Cooperation.

6. The basis of these efforts at cooperation has been the tacit recognition of the fact that the States possess legislative powers necessary for health administration and the Commonwealth possesses financial and other resources that could materially help to make administration effective. The instances of successful cooperation which we have

given illustrate voluntary collaboration between States and Commonwealth in the exercise of their respective activities. Further advance should be made by the application of the same method to all departments of preventive medicine.

With regard to cooperation between the Defence and State Departments concerning health supervision of boys and men, Colonel Maguire, Deputy Director of Medical Services, New South Wales, and Dr. Harvey Sutton, Principal Medical Officer of the Education Department of New South Wales, have submitted a memorandum which will be found as Appendix No. 27. We are of opinion that this memorandum should receive the careful consideration of the Defence Department, as it seems to us to provide a very useful method of cooperation.

Evidence submitted to us showed that health administrations in the States would welcome further collaboration. The Order in Council which created the Commonwealth Department of Health defined as some of its functions—investigation into disease, assistance with subsidies and inspiration and coordination of all health activities. The Commonwealth should provide adequate funds and staff to the Commonwealth Department of Health to enable it to extend its activities in order to carry out fully the above-mentioned functions. Details of extension required will be given under reference (c) ("The prevention of disease") and under other references.

Public Health Experts.

7. That the success of health administration is more dependent on the personality and capability of the officers directing it than on any other single factor has been impressed on us very strongly during our inquiries. We are satisfied that a greater number of experts highly trained in public health is needed in Australia. It is essential that these should be provided and given such status and salary as would attract medical practitioners of exceptional ability and efficiency. The appointment of highly trained experts in public health by the Commonwealth in such numbers as may be necessary to advise and help local authorities when desired by State Health Administrations would give opportunities for further co-operation between Commonwealth and States. Facilities for training these experts in Australia are very inadequate and ought to be increased.

The responsibility of the Commonwealth to the mandated territories makes it essential that adequate training should be provided by the Commonwealth for the medical officers who will be required for duty in these territories.

The Commonwealth could be of great assistance to State and local authorities by providing a training school where prospective medical officers of health could receive post-graduate training in different fields of health administration and where the inspectorial staff and other personnel could also be trained. At present there is a great lack of facilities for such training.

Chairs of Preventive Medicine and Tropical Hygiene.

8. A scheme has been submitted to us for the endowment by the Commonwealth of chairs and schools of preventive medicine and tropical hygiene in the Sydney University. We are of opinion that these schools should be established, but consider that at the present juncture it would be sufficient to provide a chair of preventive medicine with an adequate department of tropical hygiene which, if necessary, could be later expanded into a chair. The arguments put forward in favour of the selection of Sydney University for this purpose are to us convincing.

One feature in the work of schools of tropical medicine or hygiene should be the collection and condensation of the records of the medical administration of the Pacific Islands with a view to their distribution. Valuable reports from the Pacific Islands are wasted, as there is no central place at which they can be correlated and collated.

A suggestion was made to us that in order to give Australian graduates wider experience in quarantinable diseases and tropical medicine, the Commonwealth Government should ask the Colonial Office to nominate two or

three or more young graduates for colonial service every year in Singapore, North Borneo, Hong Kong, Fiji, as well as in the Malay States where medical officers are appointed from the Colonial Office in London and that application should also be made to the President of the Quarantine Board at Alexandria or to the Foreign Office that one of the Commonwealth Medical Officers be appointed for three months to the Sinai Peninsula during the Hedjaz pilgrimage. It was stated that there is no place where better opportunity exists to gain experience in quarantinable diseases.

9. In our opinion the Commonwealth Serum Laboratories should be used not only for the training of professional and technical officers for Commonwealth laboratories, but also for the training of experts for State and other laboratories.

Federal Health Council.

10. In our opinion a Federal health council should be instituted for the purpose of securing closer cooperation between Commonwealth and State health authorities. Conferences have been held in the past between the Chief Medical Officers of the States and Commonwealth and resolutions passed on various subjects relating to health, but in many cases the resolutions have not been put into effect in all the States. If a permanent council were established, meeting at regular fixed times to devise measures for cooperation of Commonwealth and States and of States with States and to promote uniformity in legislation and administration where advisable, we believe that the cooperation desired would be more likely to be satisfactorily achieved.

With regard to the composition of such a Federal health council most witnesses in referring to it have assumed that it would consist of the Director-General of Health of the Commonwealth and the Chief Medical Officer of each State. We think that the Commonwealth Department of Health should have two additional representatives on the council. It is advisable also that the financial aspect of any proposal made by the council should be very carefully considered and we think that a financial expert of the Commonwealth Government should be available as a member or as an assessor. The expenses of members attending meetings of this council should be paid by the Commonwealth Government and legislation should be enacted to provide funds for the establishment of the health council. If it should appear to the Government at any time that advantage would result from closer association between the Federal health council and the medical profession, not more than two representatives nominated by the Federal Committee of the British Medical Association could be appointed for a period of not more than three years.

The question of the cooperation of Commonwealth and State health authorities will also be considered when dealing with subsequent references.

Recommendations.

We recommend that—

- (1) Section 11 (b) of the *Quarantine Act 1908-1924* should be amended by the addition of the words "and in promoting public health."
- (2) Legislation should be passed by the Commonwealth Parliament to provide funds for the establishment of a health council on the lines we have recommended.
- (3) Funds should be made available to provide for the extension of the Commonwealth Department of Health in conformity with its prescribed functions.
- (4) Legislation should be passed by the Commonwealth Parliament to provide University and other training for experts in public health, also for the training of the technical personnel for all public health services both in the Commonwealth and in the States.
- (5) Legislation should be passed to provide subsidies to measures approved by the Commonwealth Department of Health, which State or local authorities are unable to finance alone—with appropriate conditions attached in order to secure efficiency.

- (6) Legislation should be passed to provide for the establishment of laboratories or subsidies to State laboratories.

IV.—PREVENTION OF DISEASE.

The third reference in our Commission is "(c) The prevention of the outbreak, development or spread of disease in the Commonwealth."

1. The existing legislation and administration of the Commonwealth and of the States is intended to achieve this object. That of the Commonwealth is mainly to prevent the introduction of disease from overseas, by the operation of the *Quarantine* and *Immigration Restriction Acts*. These Acts appear to us to be all that is required in this connexion. In the administration, however, of the *Immigration Restriction Acts*, we are of opinion that greater strictness both at the ports of embarkation and at those of disembarkation should be exercised to prevent the admission to the Commonwealth of persons physically and mentally defective.

It is necessary to bear in mind the possibilities in the near future of increased transport by air. The duration of transit from overseas will then be much shortened, giving opportunity for diseases like smallpox contracted by passengers in eastern countries to develop subsequent to their landing in Australia. Although the *Quarantine Act* has been amended to include airships in the definition of the word "vessel," the present system of quarantine will probably be insufficient to meet these new conditions. No procedure has been drawn up as to the respective parts to be taken by State and Commonwealth authorities once a quarantinable disease has broken through the quarantine cordon. Should a health council be established, as we have recommended, this is one of the first subjects that it should consider.

The control of the mandated territory of New Guinea by the Commonwealth has added considerably to its responsibilities in this connexion. Evidence was given that the administration in New Guinea is constantly confronted with the possibility of the introduction of smallpox by the fact that that territory is only ten days distant from the infected coasts of the orient. If smallpox once gained an entry into New Guinea, Australia would be menaced from New Guinea by the fact that it would be within only seven days' sail of an endemic area of smallpox. These facts furnish further reasons for placing the health administration of the mandated territory under the control of the Department of Health as we have already recommended.

Action by States.

2. With regard to the prevention of disease in the Commonwealth itself we have in dealing with reference (b) ("The cooperation of Commonwealth and State Health Authorities"), recommended that the necessary measures should be carried out by the States and indicated some of the ways in which the Commonwealth can best cooperate and assist. A statement prepared by our Secretary shows that differences exist in the health legislation and administration of the different States and in the efficiency of the methods adopted for the prevention of disease.

In New South Wales health administration was at first wholly central. The *Health Act* of 1902 placed the administration under local authorities and provided for the appointment of whole-time district medical officers of health. Up to the present only two appointments of whole-time district medical officers of health have been made outside Sydney. In the other States the administration was put in the hands of local authorities who could appoint part-time local medical officers of health, with supervision by the central health department which had power to act if the local authorities failed (as is also the case in New South Wales). In Victoria, under the *Health Act* of 1919 the State has been divided into districts, each under the supervision of a district medical officer of health and part-time medical officers of health have also been retained acting for the local authorities independently of the district medical officer of health. In neither New South Wales nor Victoria is the district medical officer of health in charge of all the health activities of the district.

Experience has shown that none of these systems is wholly satisfactory. The prevention of the outbreak of disease depends partly on control of the environment in which the community lives and partly on the supervision of individuals themselves. The State Health Departments were formed at a time when the greatest emphasis was laid on control of the environment for the prevention of disease. Their activities have therefore been mainly directed to sanitation, especially of premises and food. Recent developments in the prevention of disease have been in the direction of greater supervision of the individual life, but the resulting health activities have not in most of the States become a function of the Health Department, but have been assumed by other bodies, many of which are voluntary. Not only are these in many cases free from supervision by the Health Department, but control is frequently vested in laymen with no medical training and therefore without a full appreciation of the problems involved. The result has been that health administration has often been made subservient to political, municipal and vested interests, instead of being, as it should be, regarded as of the utmost importance.

3. Local needs vary in different places and require local adjustments. For instance, the conditions in the north are different from those in the south; campaigns for destruction of mosquitoes are much more important in Queensland than in Tasmania. Health requirements in densely populated differ from those in sparsely populated areas. It appears to us, therefore, that legislative enactments and regulations made under them dealing with health should be administered by local bodies of some kind. The tendency of those who have studied the subject most closely, is to avoid undue centralization of authority and to devolve health administration on to local authorities. These should be developed to as high a degree of responsibility and efficiency as possible and should utilize the knowledge and services of local medical practitioners in close cooperation with and under the guidance of health experts. Instances have come under our own observation (of which Toowoomba is an excellent example) where, when the advantages of certain health measures have been fully explained to the local authority and the ratepayers by local medical practitioners, the local authority after obtaining advice from a Commonwealth expert has carried them out and the people have willingly provided the funds, owing to a health conscience having been gradually developed in them. Success in any field of administration depends on the consenting attitude and goodwill of the people affected. Without such goodwill legal powers are almost valueless. But, with the best of goodwill, the local authorities require advice, assistance and stimulus from skilled and trained experts. They may also need financial assistance to carry out recommendations which experts may make. Such help in the form of a subsidy may be used as an incentive to greater activity on the part of local authorities and by having conditions attached to the granting of it may be utilized to ensure adequate and efficient service.

While, therefore, we do not consider the health legislation and administration should be uniform in all the States, we are of opinion that the Commonwealth Department of Health should lay down certain general principles of health legislation and of administration. The Commonwealth could then give financial assistance towards the cost of health administration to such States as adopted the principle in whole or in part.

A Model Scheme.

4. In any principles so laid down we are of opinion that in each State the unit of health administration should be the local authority. The head should be the Minister of Health who should hold no other portfolio than that of Health. He should control all Government services connected with health, these, if necessary, being transferred to him for the purpose in accordance with the way in which the Ministry of Health in Great Britain controls all health activities. He should also regulate all voluntary organizations connected with health. The office of permanent head of his Department (or State Director of Health, as he should be called) should be filled by a medi-

cal practitioner highly trained in preventive medicine. No lay official should be interposed between him and the Minister. The Director should be provided with a trained whole-time medical staff as well as with a secretary and clerical staff. He should be appointed for a term of years and be paid a salary commensurate with the importance of his position and responsibilities.

A State health council should be established to correlate all health activities, composed according to the requirements of particular States of—

- (1) The State Director of Health who should be the Chairman.
- (2) The Commonwealth health official, if any, in the State.
- (3) Elected representatives, not more than two, of the medical profession.
- (4) An elected representative of maternity hygiene activities.
- (5) An elected representative of child welfare activities.
- (6) Elected representatives, not more than three, of local authorities, grouped for the purpose of electing them.
- (7) An elected representative of sanitary engineers.
- (8) An elected representative of the veterinary profession.

The council should meet periodically at fixed times. Each body represented should be entitled to bring before the council through its representative any matter it may wish to have considered. Resolutions of the council should be submitted by the chairman to the Minister.

Each State should be divided into health districts comprising adjacent local authorities arranged chiefly by consideration of facilities for communication. A district generally should not be so large that the district medical officer of health cannot visit any part of it and return to his centre in one day. In each district a district health committee should be established, consisting of representatives elected by the local authorities forming the district. The committee should estimate the necessary expenditure and arrange for the revenue required by fixing the quota to be raised by each local authority. Each health district should be under the control of a whole-time district medical officer of health who must be a medical practitioner specially trained in preventive medicine. He should be responsible for the administration of all the health activities of the district and be provided with an adequate whole-time and efficient inspectorial and clerical staff. He could also perform certain duties for the Commonwealth, where necessary, such as examination of applicants for invalid pensions and for the public service and of cadets and militia, *Quarantine Act* functions, repatriation medical services, registration duties.

In each health district there should be established a public health laboratory, an X ray equipment and baby and child welfare centres. Hospital accommodation adapted to the requirements of the district should be provided for the isolation and treatment of persons suffering from infectious diseases and for maternity cases. Pre-maternity and postmaternity clinics should be conducted as part of a public hospital service. Where necessary there should also be public hospital accommodation for persons suffering from tuberculosis.

The Minister of Health should determine the bounds of the district and appoint and pay the district medical officer of health. The rest of the expenditure on health services should be met by the district committee, but in special cases the Minister of Health might subsidize the committee, subject to certain conditions. The inspectorial staff should be appointed by the district health committee, subject to the approval of the Minister of Health who should pay a moiety of the salary. No officer of the health district should be dismissed without the sanction of the Minister. The system of part-time medical officers of health should be abolished and in each health district the local medical practitioners should have duties prescribed by law in cooperation with the district medical

officer of health. For these services the medical practitioners should be paid by fees. The subject of the cooperation of the medical profession in the prevention of disease will be considered in more detail under reference (i) ("The relationship which should exist between public health authorities and medical practitioners in regard to the prevention of disease"); while the subjects of other references are concerned with the prevention of the outbreak, development or spread of disease in the Commonwealth and will be dealt with under their respective headings.

Subject to the sanction of the Minister of Health, a health district might be formed voluntarily by one large local authority or by several local authorities contiguous to each other in combination, if at any time they so desired. The district so formed might appoint its own district medical officer of health, provided that the Minister of Health pay a subsidy to the district health committee towards its expenditure on health. No medical officer of health or any other officer of the health district so formed should be appointed or dismissed without the sanction of the Minister of Health.

5. Satisfactory sanitation of individual homes and of every community, however small, must be the basis of all health measures. From our own observations in country districts the absence of expert supervision seems to us the weakest part of their health administration. The scheme we have proposed would leave sanitary control in the hands of local authorities, but would provide for expert supervision sufficiently close at hand to act quickly and effectively. The scheme would also allow for the development of an educated and responsible local authority and at the same time for the financial assistance being given by the central administration which our investigation has shown to be frequently necessary. The elasticity of the scheme would enable varying emphasis to be placed according to the situation and population of the health district on the problems of country or city, or of temperate or tropical climates. It would make all the health problems throughout a State the responsibility of the Minister of Health; and, while allowing and encouraging the assistance of voluntary organizations, would correlate them with the health administration.

Infectious Diseases.

6. In connexion with the activities of State health administrations, reference may be made to those acute infections which have been their chief concern. Owing to its situation and the activities of the quarantine administration, Australia has been comparatively free from severe epidemic diseases, such as smallpox, plague and cholera. This long-continued immunity has led to a danger to which we are compelled to call attention. Vaccination against smallpox has fallen into almost complete abeyance in most of the States; yet successful vaccination and re-vaccination constitute the only efficient protection against smallpox, whether mild or severe.

Health administration, especially in the larger centres, has reached a high development in the control of water supplies and the inspection of food, including milk. The statistics for those infections which become epidemic through contamination of water supplies and food show that the death rate for typhoid fever in Australia has steadily fallen from 148 per million in 1910 to 38 per million in 1924.

Satisfactory as these results are, they could be still further improved. Evidence has shown that there are still considerable defects in measures for the disposal of human and household waste. These defects are due in the larger centres where organized systems of sewage disposal have been constructed, to the controlling authority being independent of the central health authority. In smaller communities which possess water supplies, individual septic tanks have been installed, but these are not standardized and in some places are controlled by local authorities insufficiently educated in sanitation. The same observations apply to many districts where pan systems are in operation. Evidence was given that in the Murray Valley typhoid fever is especially prevalent and

increasingly so as the stream descends. Such a position calls for increased administrative activities in the field of sanitation both by States and Commonwealth. As regards the State such activities would be provided for under the model scheme of health administration which we have outlined. As regards the Commonwealth, the division of sanitary engineering in the Commonwealth Department of Health is already playing its part. Evidence was given as to the stimulating effect on various local authorities of the operations of this division. Its work should be extended and increased opportunity given for demonstration by its skilled staff of modern methods of sanitation to country communities. The division should undertake special research into problems of rural sanitation.

In diseases whose epidemic spread is but little influenced by improvements in sanitation, but depends mainly on direct infection, the record is much less satisfactory. Diphtheria showed a death rate per million of less than 75 up to 1910; it ranged from 155 to 168 from 1911 to 1921 and then suddenly dropped to less than 100 in the last three years. Scarlet fever, though less fatal, showed the same irregular and uncontrolled curve of mortality—in striking contrast to typhoid fever. Although measles and whooping cough are among the most fatal of acute infections in young children, no satisfactory attempt has been made to prevent their spread. In order to control such infections more intimate association of the general medical practitioner with health administration is necessary, as proposed in the scheme we have outlined. The knowledge gained in recent years in the epidemiology of these infections indicates that they can be controlled best by early diagnosis with the aid of laboratory methods, active immunization of contacts, hospital isolation of patients and their treatment by inoculation and by the detection by bacteriological methods of carriers in certain diseases. Such procedures require increased provision of ward accommodation for infectious diseases and of laboratories. Satisfactory preventive measures can only be effected by the practising medical profession. The system of terminal disinfection as at present carried out by health inspectors is of comparatively little use.

7. Increased activity is also needed in dealing with some of the chief causes of death. Health administrations do not deal with pneumonia, although it is notifiable in England and is one of the four great causes of death in the Commonwealth; or with heart disease, although it has caused over one thousand deaths annually in Australia since 1910. Among the various diseases that occur throughout the Commonwealth, three are of especial and national importance, namely, venereal disease, cancer and tuberculosis. Venereal disease will be considered in detail and recommendations concerning it made under special reference (d) ("The prevention of venereal disease"). It may be observed here, however, that the causation, mode of spread and treatment of venereal disease is thoroughly known and its complete prevention would be possible and easy if every one in the community could be induced to put that knowledge into practice. Of cancer, on the other hand, very little is known and consequently little can be done at present in the way of prevention. The death rate from cancer has steadily increased from 733 per million of population in the Commonwealth in 1910 to 934 in 1924. Research into this disease is imperative and should be the first measure directed towards prevention. The grant of £5,000 by the Commonwealth Government for cancer research is a satisfactory step in this direction and the University of Sydney has established a cancer research committee which is conducting work on the subject. The Cancer Research Scholarship founded by Sir John Grice in Melbourne has also resulted in useful investigations.

Authoritative information should be more widely disseminated among the people upon the subject of cancer, advising that it is imperative that patients suffering from cancer should seek treatment in the early stages of the disease and explaining what are the early indications of its onset. The Commonwealth Department of Health should publish reliable information on this subject and arrange for its wide distribution to the public.

Tuberculosis.

8. Pulmonary tuberculosis shows a steady fall in its death rate from 700 per million of population in the Commonwealth in 1910 to 528 per million in 1924. Although further investigations in certain limited directions are required concerning tuberculosis in the Commonwealth, its causation, mode of spread and general treatment are well known. In all the States some measures have been taken for dealing with this disease and much evidence has been submitted to us concerning their nature, extent and efficacy. A conference of the principal medical officers of the States was held in 1911, which made recommendations regarding tuberculosis. We find that these recommendations have not been carried out, that the measures taken are not uniform in the different States and are in all the States incomplete and inadequate. We have personally inspected a number of sanatoria and hospitals for tuberculosis in different States. We feel that it is necessary to call special attention to the conditions of these sanatoria. It must be borne in mind that patients are invited to enter these institutions for the safety of the community as well as for treatment. Many remain there for long periods, but it is stated that it is difficult to induce a considerable proportion to stay sufficiently long to obtain lasting benefit. It is therefore desirable that these institutions should be attractive with a fair degree of comfort and with adequate provision for recreation and occupation. We found that except in one or two instances these considerations have been overlooked. In many of these institutions we found that patients in all stages of the disease were placed together, which in our opinion is extremely undesirable. Sufficient sanatoria should be provided to accommodate all patients in the early states of the disease and this accommodation should be strictly reserved for such cases. It is equally urgent that separate hospital accommodation should be provided for advanced cases. The administration for dealing with tuberculosis should provide for a proper classification of patients and for coordination between the different agencies that treat them. Commonwealth and State health officials should inspect all sanatoria and hospitals dealing with tuberculosis, with a view of recommending to their respective Ministers a scheme for such coordination. As the Commonwealth Treasury pays a large amount *per annum* in pensions to invalids with tuberculosis, it is vitally interested and should take steps to insure that satisfactory means are provided to reduce the number of cases of tuberculosis in Australia. This involves concerted and combined action by the Commonwealth and States; but tuberculosis is such a national concern that the Commonwealth Government should realize its responsibility for placing the prevention and treatment of this disease on a sound and humane basis.

9. The prevention of tuberculosis, as in the case of venereal disease, is complicated by social and economic problems which are outside health administration as generally understood. For instance, congestion of population, bad housing and insufficiency of proper food are factors in the causation of tuberculosis. The removal of affected individuals from unsuitable environment and the provision of suitable remunerative occupation for them in the country involve a difficult economic problem. The segregation of infected individuals until rendered non-infective by treatment is a most important measure of prevention of the spread of the disease. But in practice the necessary separation of such individuals from their families introduces a social difficulty and also the economic question as to how the family as well as the individual is to be maintained while the breadwinner is segregated. Even if these problems be solved it may be difficult to compel tuberculous patients to submit to the measures considered necessary. The experience of the Repatriation Department is rather disheartening in this connexion. It made admirable provisions for tuberculous returned soldiers, including complete and thorough diagnostic methods, sanatoria, farm colonies, suitable employment for improved and hospitals for advanced and incurable cases, with ample pensions for the sufferers and their families. The measures adopted by the Department in-

cluded most of the methods at present recommended and available in the fight against tuberculosis, but the results can hardly be regarded as encouraging. The Commission of Public Health in Victoria has drawn up a scheme which would provide many essential requisites in dealing with tuberculosis. One difficulty in carrying out this and similar schemes in other States is want of funds. As to the respective shares of Commonwealth and States, it will be seen that in the scheme of State health administration we have previously outlined as a model, tuberculosis would be primarily dealt with by the district health administration which would provide a tuberculosis clinic with adequate means of diagnosis. The State Minister of Health should provide (i.) a central tuberculosis bureau under a director of tuberculosis, (ii.) sufficient properly equipped sanatoria for early cases, (iii.) occupational colonies, (iv.) chest clinics at metropolitan hospitals, (v.) hospitals for the care and segregation of advanced cases. The Commonwealth should increase the amount paid as invalid pensions in cases of tuberculosis, by granting adequate sustenance to their families while the patients are in institutions, establish a division of tuberculosis in the Commonwealth Department of Health and grant subsidies to States for expenditure on tuberculosis, subject to the recommendations and conditions made by the Department. The division should be available to give advice on tuberculosis matters whenever requested.

We wish to emphasize the fact that the facilities now existing for dealing with cases of tuberculosis must be very greatly extended and improved. The cost will necessarily be considerable. The prevention of this disease further involves the general improvement of all sanitary conditions in large towns, abolition of slums and congestion of population, town planning and provision of public parks, gardens and playgrounds, with adequate sunlight and fresh air to all dwellings, sufficient proper food, especially abundant pure milk, eradication of tuberculosis from dairy herds and suitable conditions of employment, especially in mines. Some of these matters will be considered in more detail under other references.

10. More effective control of the infectious diseases mentioned above will also lessen the prevalence of many non-infectious conditions which are the direct or indirect results of past infection. Such a reorganization of State health administrations as we have proposed will assist in preventing many other diseases which are not regarded as infectious.

Action by the Commonwealth.

11. So far we have dealt with State activities in the prevention of disease, as we have presupposed the retention of State legislation on health. But in addition to the help which the Commonwealth could give to the States by inspiring and educating local authorities through the instrumentality of its divisional directors, it could also give more direct assistance.

(a) It could directly subsidize States which take steps to the satisfaction of the Commonwealth, to bring their legislation and administration into conformity with the scheme we have outlined. A subsidy might be made towards the salaries of district medical officers of health or a general subsidy to supplement State health expenditure, distinct from specific subsidies, such as those for the control of venereal disease, tuberculosis, maternity hygiene and infant welfare, which could be provided by the Commonwealth even if a State did not adopt the proposed model administration.

(b) In the Federal and mandated territories opportunity is given for the establishment by the Commonwealth of health legislation and services that would be models and object lessons for other Governments and administrative bodies. The Commonwealth Department of Health could establish a model health centre at Canberra which is an area already properly planned and suitable for the purpose. Model health ordinances could be made controlling all health services, including sanitary services, milk and meat supply, noxious trades, industrial hygiene and smoke prevention.

The Commonwealth could also undertake the periodical medical examination of all members of the public service and all employees throughout the Federal Territory and make a systematic study of their illnesses.

(c) The work already done towards the eradication of hookworm, the investigation into diphtheria at Bendigo, into silicosis in New South Wales, into plumbism at Port Pirie and that which is now proceeding into miners' phthisis in Western Australia are examples of Commonwealth health activity which can be widely extended without interfering with State rights in regard to health. Special inquiries are needed into such matters as the prevalence of typhoid fever along the Murray Valley (which concerns three States), rural sanitation, the question of plumbism in Queensland, filariasis, the unclassified fevers of Northern Queensland, infantile paralysis in Australia and many others.

(d) By arrangement with a State a specially trained Commonwealth officer might from time to time be stationed in different localities to conduct model health campaigns such as have been attempted in the United States of America.

(e) We have been impressed with the great value of the work being done by the Commonwealth Laboratories established in the different States. Medical practitioners and municipal authorities in such localities have been unanimous in their testimony as to the assistance these laboratories have already given in the early diagnosis and control of infectious and other forms of disease. In addition three of them (Bendigo, Port Pirie and Kalgoorlie) have been bases for special investigations. Evidence has shown that some of the States have had difficulty in procuring medical directors for their laboratories. The Commonwealth has had no such difficulty, as the directors of its laboratories have received training in the Commonwealth Serum Laboratories and form part of the Commonwealth service which in so specialized a branch of medicine is of great advantage to the individual. We are of opinion that the number of laboratories should be increased and so distributed that they would eventually be developed into centres of health districts, with which other branches of health organization could be connected. It might be a matter for consideration by the Commonwealth health council, if established as we propose, whether all diagnostic laboratories should not be provided by the Commonwealth and their directors and staff made officers of the Commonwealth Department of Health.

(f) The conferences of divisional directors and State representatives on industrial hygiene and sanitary engineering that have been held during the past few years indicate a method of education and stimulation that can be applied to other health problems, such as diphtheria, tuberculosis, maternity hygiene, child welfare.

12. In connexion with the prevention of the development of disease it may be noted that the General Medical Council of Great Britain resolved in May, 1922, that "throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspect of medicine." We are of opinion that steps should be taken by the Faculties of Medicine in the Australian Universities to give the fullest effect possible to this resolution. The Faculties might also extend their usefulness by arranging for regular medical examinations of all medical students and sending in the result to the State health authority. Any financial assistance granted by the Commonwealth to Universities for teaching preventive medicine should be given with the condition that arrangements be made for the above-mentioned purposes.

13. Evidence was submitted on the effect of alcohol on health and on the influence of alcohol in the spread of venereal diseases. Having considered the subject, we are of opinion that the excessive use of alcohol is both directly and indirectly responsible for ill-health and disease to an extent which is very difficult to estimate.

14. We are of opinion that if the scheme of health administration we have proposed were adopted in all the States, many existing obstacles to progress in public health and in the prevention of disease in the Common-

wealth would be removed. We recognize that the Commonwealth can promote the adoption of such a scheme chiefly by indirect measures; also that change can only come gradually. State health legislation will require amendment; methods will have to be slowly organized; money will have to be provided; but we urge that in all new legislation and administration the ideal we have proposed should be kept in view.

Recommendations.

We recommend that—

- (1) The Commonwealth Department of Health should formulate model outline of general principles of health administration, along the lines we have suggested and that the Commonwealth should subsidize States for expenditure on health, provided that their health administration sufficiently conforms to such model.
- (2) In the Commonwealth Department of Health, divisions of epidemiology and tuberculosis should be established to investigate problems of infectious disease and advise generally in regard to all efforts to control infectious diseases.
- (3) The Commonwealth Department of Health should formulate the principles of a comprehensive campaign against the spread of tuberculosis and the Commonwealth should make conditional subsidies to the States for carrying out such a campaign, similar to those for venereal disease.
- (4) The *Invalid Pensions Act* should be amended to allow of payment of pensions to the dependants of patients suffering from infective tuberculosis while they are undergoing treatment in sanatoria or hospitals.
- (5) The system of diagnostic laboratories should be extended and that laboratories should be distributed in places that probably would be centres in health districts in the future.
- (6) The system of inquiries into special infectious and other diseases and of experiments concerning their control should be continued.
- (7) The system of conferences with State representatives on special aspects of sanitary engineering, industrial hygiene and other problems of health should be continued.

V.—VENEREAL DISEASES.

Effect of Legislation.

1. With regard to reference (d) ("The prevention of venereal disease") the evidence showed that legislation dealing with this subject had been enacted and was in operation in all the States except South Australia, where an Act has been passed but is not proclaimed. These Acts have not been in operation long enough to enable definite conclusions to be drawn as to their effects. In Western Australia, where the *Venereal Diseases Act* has been in force for the longest period and where the Commissioner administering the Act has taken a very keen personal interest in this subject, the statistics showed a reduction in the number of cases of venereal diseases reported. Owing to the efficiency of the administration, we are of opinion that notification in this State is satisfactorily carried out and that the reduction is real and not due to cases not being reported. In Queensland the figures showed some reduction, but it is not certain that all cases are reported. In Victoria witnesses thought there was some reduction in the number of cases of syphilis, but not of gonorrhœa. In New South Wales evidence was conclusive that notification was not generally observed and the figures were not reliable. In South Australia venereal disease clinics have been established at the Adelaide Hospital for eight years and the evidence was that the number of cases of syphilis treated was less. In Tasmania the figures did not give any indication of diminution in the disease. In all the States except Western Australia witnesses stated that gonorrhœa was just as prevalent as ever. The evidence also indicated that the treatment of gonorrhœa in women was most unsatisfactory, both as regards results and in the insufficiency of provision for treatment. Nearly all the witnesses were pessimistic on

this subject. Hardly any of the venereal disease clinics are capable of treating effectively by sufficiently frequent and personal attention all the cases of gonorrhœa that present themselves, especially the cases in women. Several witnesses stressed the difficulty of preventing the spread of gonorrhœa without means for segregating until declared non-infectious the women who, while still-infected, act as either regular or amateur prostitutes.

Venereal Diseases Clinics.

2. In most venereal diseases clinics the equipment is not in accordance with modern practice the reason being lack of funds. Each State is spending two or three times as much as the Commonwealth subsidy allotted to it, but it is questionable whether the money has always been spent in the wisest way. In some clinics syphilis is dealt with by a separate staff and independently of gonorrhœa, while in others the two diseases are treated together. The evidence submitted and our own observations satisfied us that the former method is preferable, as the two diseases, though common in origin, are quite distinct in character and in methods of treatment required. More clinics and better laboratory facilities are necessary in all the larger centres. The Government laboratory in Sydney is overwhelmed with routine examinations. The laboratory at Brisbane has had no medical director for eighteen months and there is no one competent to conduct the complement fixation test for gonorrhœa which is laid down as one of the essentials for a certificate of cure; in Launceston specimens have to be sent to Melbourne for examination; in Hobart there is no medical director of the laboratory.

3. Our inspections of various venereal diseases clinics in the different States satisfied us that they are generally inadequate in accommodation and equipment and so overcrowded that patients with gonorrhœa especially cannot be treated in a satisfactory manner. The inadequacy is chiefly due to lack of funds, but to some extent to imperfect administration. From what we have seen, as well as from the evidence submitted, we consider that venereal diseases clinics are more satisfactory when attached to hospitals than when separate establishments. More facilities for serological examination and for any treatment that may be necessary, are available at hospitals, and the patients when attending them are not necessarily labelled as suffering from venereal disease.

4. As a signatory to the League of Nations Pact, the Commonwealth is under an obligation to provide facilities for the treatment of sailors suffering from venereal disease who come to its ports, also to supply a clinical record to each sailor thus treated on a form, prescribed by the International Public Health Office, which can be taken by the sailor to other countries and kept up to date. Satisfactory provision for the treatment of sailors has been made by the Commonwealth Health Department at all capital ports, except Melbourne and Hobart. In our opinion similar provision should be made at these two capitals and at all other important sea ports in Australia, especially if they are first port of entry.

5. An inquiry by the International Public Health Office of Paris revealed the difficulty of obtaining exact information regarding the extent of venereal disease amongst pregnant women. A number of married women are treated for venereal disease at women's clinics who are unaware of the nature of their illness. These and other facts have impressed upon us the importance of venereal disease in relation to marriage. We are of opinion that this matter should be specially dealt with when the Commonwealth introduces legislation on the subject of marriage and divorce.

Commonwealth Subsidies.

6. One of the conditions of the Commonwealth subsidy of £15,000 on a £1 for £1 basis to the States for the expenditure they incur on venereal disease is that venereal diseases clinics should be inspected by a Commonwealth officer to see that the conditions are carried out, but little seems to have been done in that direction and it was admitted that there was no regular system of inspection.

To overcome some of these difficulties we are of opinion that a division of venereal diseases should be established

in the Commonwealth Department of Health and that the Commonwealth subsidy should be increased from time to time, but more strictly conditioned and given not on the £1 for £1 basis to recoup the States for any expenditure they may incur, but for specific purposes approved and recommended by the Director-General of Health, such as establishing clinics or providing them with equipment and assisting in propaganda and the publication of information regarding venereal disease and its prevention.

7. In regard to the prevention and control of venereal disease generally it must be understood that the problem is complicated and involves not merely medical or scientific, but economic, political, social, moral and even religious considerations; consequently progress will be slow and gradual. Too much must not be expected from legislation which is difficult and in some respects impossible to enforce. Thus we had it in evidence that the clauses of the *Venereal Disease Acts* with regard to treatment by unqualified persons were practically useless, because patients would not give evidence in a court of law and publicly state that they had venereal disease. The same difficulty occurs in endeavouring to prove that prostitutes or others are spreading the disease. The Queensland Act is the only one that provides for the detention of prostitutes who are infected. It has been suggested that similar clauses should be introduced into the Acts in the other States, but it is doubtful whether they can be usefully put into operation. It is very necessary to provide hostels into which such women could enter voluntarily for treatment.

8. We investigated the value of the work of women police and consider that their usefulness has been fully proved not only in the control of prostitutes, but of defaulters from treatment. We consider that their services should be more fully used in connexion with venereal clinics.

Recommendations.

We recommend that—

- (1) In the Commonwealth Department of Health a division of venereal diseases should be established in charge of a whole-time director.
- (2) The Commonwealth should establish clinics for seamen at important seaports.
- (3) The Commonwealth subsidy should be substantially increased, more strictly conditioned and given for specific purposes approved by the Director-General of Health.
- (4) More clinics should be established in the larger centres and more widely distributed in each centre.
- (5) The equipment and staff of each clinic should be such that patients can receive adequate individual attention.
- (6) Such clinics should be established preferably at general hospitals.
- (7) Clinics for female patients should be established preferably in connexion with women's hospitals or women's departments of general hospitals.
- (8) Clinics for syphilis and gonorrhœa should be separate.
- (9) Adequate laboratory facilities should be provided for dealing with venereal diseases situated conveniently to each clinic.
- (10) There should be greater cooperation between women police and authorities in charge of clinics.
- (11) The details of venereal disease administration should be made the personal responsibility of a medical officer of the State Department of Health.
- (12) The Commonwealth should undertake the establishment of clinics or provision for the treatment of venereal diseases, when requested by a State.
- (13) When the Commonwealth passes legislation in the exercise of its constitutional powers regarding marriage and divorce, it should include clauses dealing with venereal disease, especially—
 - (a) a clause similar to Section 13 of the *Venereal Diseases Act*, 1918, New South Wales, making marriage of any person suffering from venereal disease in an infectious stage an indictable offence;

(b) a clause providing that no marriage should be allowed unless the parties make declarations that they are not suffering from any contagious or infectious disease.

VI.—UNIFORM LEGISLATION WITH REGARD TO THE PURITY OF FOOD AND DRUGS.

Degree of Existing Uniformity.

1. From the evidence submitted on this subject by a number of witnesses it would appear that a considerable degree of uniformity has been reached throughout the States in legislation with regard to the purity of food and drugs. Since 1909 several conferences of Commonwealth and State health authorities, attended in some cases by Government analysts and commercial representatives, have been held, notably those of 1913 and 1922, at which recommendations were made embodying a complete series of regulations as to the use of preservatives and colouring matters and other foreign substances and as to the labelling of packages and prescribing standards for practically all foods and drugs. Owing to geographical and climatic conditions the formulation of a standard for fresh milk and the question of preservative substances in cream and concentrated milk were left to each State.

2. All the States have adopted the regulations and standards recommended by these conferences, with a few exceptions concerning which there is still some difference of opinion. Some of these exceptions have been matters of special concern to manufacturers and importers, particularly the standard relating to infants' foods, certain portions of the labelling conditions and the question of the declaration of the ingredients and their proportion in proprietary medicines.

3. Our attention was drawn by several witnesses to other matters dealt with under the regulations of the States concerning foods and drugs. Uniformity was said not to be practicable, for instance, with regard to bread, owing to the fact that the water content varies according to the kind of wheat used. Several witnesses urged that the standard for milk should not be limited to its chemical constitution, but that provision should be made for tests as to its age and bacteriology. One witness gave evidence on the growing practice of using certain prohibited colouring substances in confectionery and the mislabelling of such foods. The question of preservatives in food was also referred to by several witnesses, and attention was specially drawn to the Final Report of the British Committee on the Use of Preservatives and Colouring Matters which sat in England in 1924.

Standards for Metric System.

4. Various other matters were discussed by a number of expert witnesses, such as the desirability of an Australian pharmacopœia or as an alternative an addendum to the *British Pharmacopœia* to meet Australian conditions with respect to certain drugs and the question of the determination of standards for the metric system of weights and measures in Australia. The metric system as distinct from the Imperial system of weights and measures is in general use throughout Australia as in other countries in connexion with scientific subjects and it is used to a large extent by medical practitioners in the prescribing of medicines; yet there are no standards established by law in Australia for the metre, the gramme, the litre or other metric measures of length or capacity. The Commonwealth Parliament has power under the *Constitution Act* to legislate in this matter.

Patent Medicines.

5. Representations were made by several commercial witnesses in Sydney as well as in Melbourne with respect to No. 79 of the Victorian Regulations for Foods and Drugs, which provides that every package containing a patent or proprietary medicine shall have attached thereto a label on which shall be inscribed the names of the drugs therein which have any therapeutic action. These witnesses took the view that insistence upon this requirement would constitute an infringement of the trade mark

rights of proprietors and that there would be nothing to prevent other persons from making the goods and selling them under the original trade name.

It may be pointed out that the conference of health officials of the Commonwealth and States of Australia of 1922 recommended with reference to patent or proprietary medicines, the disclosure of ingredients and their proportion on every package, with a proviso that exemption be granted from this requirement on condition that particulars be confidentially deposited with the State health authority, that no change be made without notification and that an undertaking be given that all goods should comply with the particulars deposited. The evidence submitted showed that no State has adopted the proposed regulation or has as yet taken control of such preparations.

Infants' Foods.

6. Evidence was also given by several witnesses concerning the requirements of the Victorian regulation No. 25, as to infants' foods. It was stated that the sale in Victoria of infants' foods which are allowed to be prepared and sold in all other States would infringe the requirement of the Victorian regulation with respect to lactose and render the vendor liable to prosecution.

Labelling.

7. The general question of labelling presents further difficulties. It was asserted that even if uniformity were reached with regard to standards, difficulty might arise in the interpretation of the regulation as to labels. For example, a food or medical preparation might be placed on the market of which the ingredients were fully set out on the label, with extensive and extravagant claims as to its value for the cure or treatment of disease. The demands for the amendment of any such labels might vary in the different States. One witness stated that considerably more trouble was caused in dealing with the labelling of interstate foods than with the difference in standards or with deliberate adulteration and he was of opinion that only by the clearest and most explicit regulations could it possibly be realized by manufacturers what was actually required on labels.

Federal Standards Committee.

8. It was suggested that it would be desirable to have a Federal Foods and Drugs Standards Committee under a Commonwealth act for the purpose of making standards and regulations in regard to imported foods and drugs and all foods and drugs of Australian origin subject to interstate exchange. To meet the serious labelling difficulties it was considered that the proposed Federal Foods and Drugs Standards Committee should have the power of appointing a subcommittee for examining all labels and deciding upon the amendments which would be necessary in each case and that administration of the Commonwealth act should be left in the hands of the States as at present.

Legislation.

9. It appears that the Commonwealth has power under the constitution to legislate with respect to imported foods and drugs and as to foods and drugs of Australian origin which are the subject of interstate trade, but it is understood that any such food or drugs after they leave the control of the Commonwealth (that is, after they have been released by the Customs or have been transferred from one State to another) are subject to State laws and if they infringe the law of the State in which they are released or to which they are transferred, the vendor is liable. To overcome the difficulty now experienced by manufacturers and importers and in order that uniformity may be accomplished with respect to foods and drugs, we are of opinion that the States should voluntarily transfer by legislation to the Commonwealth their powers of control of imported foods and drugs and of foods and drugs of Australian origin, which are the subject of interstate trade, so as to enable the Commonwealth to legislate on the subject. The Commonwealth could then pass the necessary legislation and appoint a food and drugs standards

committee for the purpose of formulating uniform regulations as to standards and labelling. A subcommittee of the food standards committee or a body of experienced officers appointed by the foods and drugs standards committee could deal with and decide upon details of labelling for such foods and drugs. To avoid duplication of machinery the regulations made by the foods and drugs standards committee so far as they concern the States should be administered by the State health authorities of the various States in conjunction with their own *Foods and Drugs Acts* and regulations. This body would be in a position to deal with the various difficulties to which our attention has been drawn.

Recommendations.

We recommend that—

- (1) The Parliaments of the several States should refer to the Parliament of the Commonwealth the matter of the control of imported foods and drugs and of such foods and drugs of Australian origin as are or may be the subject of interstate trade and that the Parliament of the Commonwealth should thereupon make laws for the control and regulation of such foods and drugs.
- (2) The Commonwealth Parliament should pass legislation for the establishment of a legal standard for a metric or decimal system of weights and measures in Australia.

VII.—MATERNITY HYGIENE.

1. Whatever the intention of the Commonwealth Parliament may have been when it passed the *Maternity Allowance Act* in 1912, the public expected that the Act would enable all mothers to pay for proper medical, nursing and other attention during childbirth. That expectation appears to have been realized to a considerable degree. In the last financial year 79·3% of the 134,000 mothers who were paid maternity allowances were attended by medical practitioners, while in 1913 the percentage was only 63·2. In Victoria, the only State for which figures were supplied, an examination of 35,700 maternity allowance claims during the twelve months ending June 30, 1924, showed that 60% of the births occurred in hospitals, private and public. We think, however, that the public expected further that as a consequence of this presumably better attention the maternal mortality would be proportionately reduced. Unfortunately it has not. The figures submitted by the Commonwealth Statistician showed that the number of deaths of mothers per 1,000 births was 5·1 in 1910 and 5·5 in 1924. In 1915 it was as low as 4·3 and in 1917 it rose to 5·6.

Maternal Mortality.

2. A comparison of statistics for the periods 1909-1916 and 1917-1924 shows that the average maternal mortality rate has increased from 4·87 to 4·98, while the average infantile mortality rate for the same periods has fallen from 70·9 to 61·0. The average death rate for the same periods has fallen from 10·68 to 10·15. Dr. E. S. Morris, in his prize essay, "On the Causes and Prevention of Maternal Morbidity and Mortality," states that in the year 1923, regarded by him as a fairly normal year, 5,839 women, of whom 3,861 were married, between the ages of fifteen and forty-nine, died and of this number 691 died in what ought to be the normal physiological process of childbirth or approximately one-sixth of the total deaths of married women. Tuberculosis and cancer, recognized as very fatal morbid conditions, caused respectively about one-fifth and less than one-eleventh of the total deaths of women, married and single.

Such figures must arrest the attention of every one and urgently demand investigation into the conditions that allow such results. In addition numerous cases occur of illness and subsequent morbidity and invalidity which are the result of non-fatal sepsis, and of accidents of childbirth, regarding which no figures are available. The evidence submitted to us showed that the resulting disability arising from such illnesses is very considerable.

Puerperal Sepsis.

3. No reliable figures are available as to the frequency with which puerperal sepsis occurs. It is not notifiable under the *Public Health Act* of New South Wales. Although cases occurring in private hospitals are reported to an official of the Health Department, cases in public hospitals are not reported. In the other States puerperal fever or septicæmia is a notifiable disease under the *Health Act*, but no satisfactory definition of puerperal fever has been drawn up. It is recognized both in Australia and in England that the present system of notification of puerperal sepsis is valueless as a true record of morbidity. There is no means of determining how many deaths notified under the term septicæmia originate in puerperal conditions. In Victoria puerperal fever is notifiable; septicæmia is not. Numerous cases of septicæmia must follow abortion, but there are no figures to show how many.

Causes and Prevention of Maternal Mortality.

4. The above facts indicate a grave national danger, greater even than official figures reveal, but its existence has not caused any health department to take steps by a conference of those interested or by any other course to determine the extent of the danger or suggest means to combat the evil. Such inactivity on the part of health departments illustrates a serious defect in existing health administrations and of the necessity previously mentioned of obtaining statistics of morbidity.

5. At present no official investigation is made as to the circumstances under which maternal deaths occur in connexion with childbirth. In our opinion it should be a duty of a medical officer of the health administration to make a thorough inquiry into the causation of each individual death in childbirth with the object of obtaining data for the improvement of maternity hygiene.

6. All the witnesses we have examined concerning this subject agree that up to the present the conditions of maternity hygiene have not been satisfactory. It is admitted that the results of obstetric practice have not improved proportionately to the scientific advances that have been made in general medicine and surgery.

7. An analysis of the causes of maternal mortality shows that about one-third of the deaths occurred from sepsis, one-third from the toxæmias of pregnancy and one-third from other complications of childbirth. No improvement has occurred under any of these heads. Sepsis is most frequently the outcome of faulty conditions at or about the time of childbirth either in the professional attendance or in the private home or hospital where the patient is attended; the other complications can in the majority of cases be prevented by routine supervision of the health of expectant mothers, which procedure also lessens the risk of sepsis in certain cases. At the time the *Maternity Allowance Act* was passed, emphasis was placed on proper attendance at childbirth; the main change in medical thought on this subject since that date has been the shifting of the emphasis to prenatal supervision. The evidence submitted to us by obstetric authorities indicated that prenatal supervision was one of the most important measures for preventing a great deal of maternal mortality and morbidity. Although this fact is not sufficiently recognized as yet by administrative authorities and the general public, the medical profession in Australia as elsewhere has realized in the past few years the necessity for reform in the obstetric practice of its members and in the methods of training medical students in practical obstetrics. The Victorian Branch of the British Medical Association has instituted an inquiry into this subject and drawn up a report which was submitted to us. It stated that the time and opportunities given to obstetrics are insufficient to train properly the average student for this important branch of general medical practice, that the standard of work should be raised, that the teaching should be extended in time and amount, that the standard of examination should be raised and that a whole-time director of obstetrics should be appointed. As a result of this inquiry the Wilson Trust has made a grant to the University of Melbourne providing for the appointment of a Director of Obstetric Research and it is expected that his investigation will lead to important and valuable reforms. In Sydney

a whole-time professor of obstetrics has been appointed and the curriculum amended to provide more efficient teaching in the subject, including a course of prenatal hygiene. At Adelaide maternity wards are being erected at the Adelaide Hospital where students will receive additional special training in obstetric practice. The Victorian Post-Graduate Committee has held refresher courses in obstetrics for medical practitioners and post-graduate classes are being formed in other States.

8. Women receive attention during childbirth not only from medical practitioners, but also from midwives. In all the States legislation has been enacted for the registration of midwives, with provision for registration in future only after training and examination. These Acts, however, permitted the registration of women who had been acting as midwives prior to the passing of the Acts and who were not necessarily properly trained. Several years must elapse before this class of nurse can be replaced by those who are efficiently trained in modern methods. The facilities for training midwifery nurses are insufficient and there is difficulty in meeting the demand for efficient nurses.

9. The shortage of nurses has resulted in untrained nurses, who are registered under the *Midwives Act*, adopting the practice of attending several patients in their own homes for a few hours each day. As a result apparently of the passing of the *Maternity Allowance Act* a large number of small private maternity homes have sprung into existence, conducted by nurses who although registered are not always efficient in their methods and are not capable of training others. Efforts are made in most of the States to supervise these homes, but with varying success. No standard procedure exists. In some States supervision is left to the local authority, in others the central authority carries it out, sometimes in remote country districts by the aid of the police or other unqualified deputies. In some cities when septic cases occur in such maternity homes, overlapping of authority occurs.

Accommodation for Maternity Cases.

10. The figures furnished to us by the Commissioner of Maternity Allowances as to the percentage of cases attended in hospitals, public or private, for the year ended June 30, 1924, were as follows:

New South Wales	..	..	..	..	..	41
Victoria	..	..	..	..	..	60
Queensland	..	..	..	..	..	61
South Australia	..	..	..	..	..	57
Western Australia	..	..	..	..	..	62
Tasmania	..	..	..	..	..	51
Australia	..	..	..	..	..	52

One witness stated that there were not enough maternity beds in Melbourne or in country districts in Victoria. In Hobart it was stated that at least 40% of mothers were attended in hospital and that there was insufficient hospital accommodation for maternity cases in Tasmania. In South Australia all subsidized country hospitals possessed maternity wards. Western Australia had only private maternity hospitals outside Perth. In New South Wales no public maternity hospitals were in existence outside Sydney, but there were maternity wards connected with general hospitals and also private hospitals. In some country districts maternity wards have been provided, which were not fully occupied. Some witnesses in country districts in New South Wales thought there would be difficulty in inducing women in remote parts to come into hospital, but suggestions were made to overcome this difficulty by the establishment of hostels for children in the same town as the maternity hospital. This has been tried on a small scale with success. Public hospital accommodation for maternity cases has been widely provided in recent years in Queensland, where every hospital subsidized by the Government is to provide for maternity cases. The consensus of opinion seemed to be that there is need for increased accommodation for maternity cases in centres and extension of measures such as bush nursing or subsidizing midwifery nurses in remote districts.

Prenatal Clinics.

11. At the request of their medical staffs most of the large public maternity hospitals in the States have

instituted prenatal clinics. Most of these are comparatively recent and are not yet quite on a proper footing, but they are increasing in number and efficiency. Medical practitioners are giving prenatal care to their private patients in increasing numbers. At many baby health centres throughout the Commonwealth some prenatal advice has been given to expectant mothers. The educative value of these centres in inculcating on women the necessity for such supervision is undoubtedly. But the work is done by nurses, whereas examination and advice by a medical practitioner are required in all cases.

12. We cannot lay too much stress on the necessity of providing increased facilities for prenatal care and supervision. All the medical witnesses we examined testified to the great value of such measures as a means of preventing maternal mortality and morbidity. For example, the statistics of the Queen Victoria Hospital for Women, Melbourne, though dealing with a few cases, are very striking. All women confined in the hospital must attend the prenatal clinic. During the three years the maternity department has existed 1,031 cases have been confined, with two maternal deaths. In 1924, 429 women were confined and no maternal death occurred. Further, there were no cases of eclampsia and owing to the early detection of venereal disease in the mother and its treatment no grossly syphilitic infant was born in the department.

13. All the evidence submitted indicated that one of the most important measures that should be undertaken for improving maternal mortality and morbidity is the adequate provision in populous centres of properly equipped and efficiently staffed maternity hospitals, either public or intermediate, with a proper ambulance service. These would not only give better accommodation for maternity cases, but would afford the much needed facilities for training obstetric nurses and medical students. Prenatal and postnatal clinics as well as observation wards should be associated with all such hospitals as well as rest homes for expectant mothers and an externe department where considered necessary. In less populous districts maternity wards should be attached to every general hospital. In dealing with reference (c) ("The prevention of disease") we have already recommended that such measures should be provided at district health centres by the State Health Administrations.

14. We do not consider it is incumbent on us to lay down in detail ideal methods of teaching students and nurses in obstetrics, of hospital arrangements or of prenatal supervision. These must be left to the bodies concerned.

Division of Maternity Hygiene.

15. We are of opinion that the Commonwealth can best assist in maternity hygiene by granting subsidies to States which provide such facilities for attention to pregnant and parturient women as are considered necessary by the Commonwealth Department of Health. A division of maternity hygiene should be established in that Department under a trained director who should advise as to the directions which State activities should take, lay down the conditions under which subsidies should be granted and see that they are observed.

Maternity Allowance Act.

16. Many suggestions were made by witnesses as to ways in which the money now expended under the *Maternity Allowance Act* could be better used for the promotion of maternity hygiene. The majority of such witnesses advocated its abolition and the devotion of the money thus made available to the provision of clinics and hospitals. It is doubtful whether the *Maternity Allowance Act* had any object other than the provision of comfort to the mother in childbirth. The evidence of the Commissioner of Maternity Allowances showed that the primary object was humanitarian and not the promotion of health. Evidence was submitted that the allowance was a benefit from this aspect and should not be superseded by any scheme less universal in its application. No increased saving of maternal or infant life in the first months has occurred since the passage of the *Maternity*

Allowance Act and it does not seem to be the highest form of humanitarianism merely to provide comfort which does not lessen the risk of death or disability to the mother or her unborn infant. We consider that no scheme of maternity allowance or motherhood endowment can be regarded as satisfactory which does not attempt to secure adequate care in conformity with the best medical experience for the health of mother and child both in the prenatal period and at the time of childbirth. If the *Maternity Allowance Act* be continued, we are of opinion that the Act should be amended to provide for payment of the allowance only on the conditions that the expectant mother should make application for the benefit at least five months before the date of the expected birth and that a medical certificate be produced that the mother has had satisfactory prenatal supervision. The granting of maternity benefits could in this way be utilized to secure satisfactory prenatal care and thereby a reduction of maternal and infantile mortality and morbidity. Such procedure would involve the provision of increased facilities for prenatal treatment, the necessity for which we have already advocated.

We are of opinion that when adequate facilities for prenatal and postnatal care and medical attention at confinement have been provided and the public has been educated to recognize that every expectant mother must make use of them, the *Maternity Allowance Act* should not be universal in its application, but payment of the allowance should be restricted to cases where special difficulties exist, either financial or otherwise. We are of opinion, also, that any maternity benefit under a national insurance scheme should be payable only on the conditions we have suggested above regarding the maternity allowance.

If the scheme of State health administration we have recommended were established, application for maternity benefit or allowance could be made to the district medical officer of health who could perform this service for the Commonwealth and arrange with the patient's medical attendant or with a maternity hospital and clinic for the necessary attention. Pending the passing of legislation, the Commonwealth Department of Health should issue a booklet, as has been done by the Canadian Government, to be given to each applicant with necessary information as to precautions to be taken during pregnancy.

17. In connexion with the *Maternity Allowance Act* it may be pointed out that no standard of viability is laid down in the Act when payment is claimed for a child not born alive. We suggest that the child must measure at least thirty-five centimetres (approximately fourteen inches) in length.

Recommendations.

We recommend that—

- (1) In the Commonwealth Department of Health a division of maternity hygiene should be established.
- (2) Conditional subsidies should be granted by the Commonwealth to States in order to provide facilities for attention to women before, during and after childbirth, according to standards approved by the Commonwealth Department of Health.
- (3) The *Maternity Allowance Act* should be amended—
 - (a) to provide that the application for the allowance should be made at least five months before the date of the expected childbirth and that the allowance be not paid unless a medical certificate be produced to the effect that the mother has had prenatal supervision; and
 - (b) by the addition to Section 5 (2) of the words: "No child shall be deemed a viable child which measures less than thirty-five centimetres (approximately fourteen inches) in length."
- (4) Conditional subsidies should be granted by the Commonwealth to assist in the education of medical students and nurses in obstetrics in accordance with conditions approved by the Commonwealth Department of Health.

VIII.—CHILD WELFARE.

1. Schemes for child welfare have been chiefly concerned with health of the infant and of the school child. For the consideration of all the problems of children's health it is necessary to deal with the subject under four divisions corresponding to special age periods, namely: (i.) The first month of life; (ii.) from the first month up to two years; (iii.) the period from two years to five years; (iv.) the period from five years to adolescence.

The First Month of Life.

2. Although infantile mortality, that is the death rate in the first year of life, has been substantially and steadily reduced in Australia in the past twenty-five years, investigation shows that this reduction is confined to the later months of infancy. The mortality for the first month of life has been almost constant for the past ten years, at about thirty deaths per 1,000 births, amounting to between 40% to 50% of the infantile mortality each year. Two-thirds of the deaths occurring in the first month of life take place in the first week of life; they are mostly due to such causes as prematurity, congenital debility and malformations. Consequently their causation must be regarded as being connected with conditions arising before or during birth rather than with conditions arising after birth. Intimately bound up with this question is that of still-births. Such births are registrable only in Western Australia, where, according to the evidence of the Statistician of that State, they are registered both as births and deaths. In other States they are not registered by law. The Tasmanian Statistician said that in that State they have generally been registered since the passing of the *Maternity Allowance Act*. No registration of death is required before the burial of a still-born infant in any State except Western Australia. This variation of procedure in the different States necessarily introduces confusion into the statistics of infantile mortality. We consider it desirable that the Commonwealth Government should take at once the necessary steps to bring about uniformity of procedure in the different States. Investigation showed that different methods have been followed in different countries and the Health Organization of the League of Nations has this year issued a memorandum with suggestions for uniformity. They suggest: (1) A birth is to be deemed a live birth, if an infant breathes; (2) a dead-birth (or as we term it a still-birth) is the birth of a fetus after twenty-eight weeks' pregnancy measuring at least thirty-five centimetres in length in which pulmonary respiration does not occur; such a fetus may die either (a) before, (b) during or (c) after birth, but before it has breathed; (3) every live birth should be inscribed in the register of births; an infant born alive, but dying before registration of its birth, should be entered both in the register of births and in that of deaths, certificate of cause of death being produced; (4) every dead-birth should be entered in a separate register of dead-births, the person responsible for the registration being required to produce wherever possible a certificate of the cause of death signed by a registered medical practitioner. Rates of infantile mortality will be based on the numbers of live births and of deaths of infants under twelve months.

3. The above deals only with the statistical side of the question. There is also a preventive aspect to be considered. In England, although still-births are not registered, the body cannot be buried without a medical certificate or a declaration by a midwife that such child was not born alive. The birth of a still-born child must also be notified to the medical officer of health of the district. Investigations in England by Dr. Eardley Holland, published by the Ministry of Health in 1923, showed that 50% of still-births are preventable, 20% by prenatal methods alone (15% of these being due to syphilis), 12% by a combination of prenatal and intranatal methods and 20% by intranatal methods alone. Gallie, working in the Toronto General Hospital, arrived at similar conclusions. Evidence showed that in the Royal Hospital for Women in Sydney a prenatal clinic has been at work since 1912. A comparison of four thousand births since that time with four thousand births before prenatal supervision was intro-

duced showed a reduction of about thirteen still-births per 1,000 births. This experience, coinciding as it does with investigations in England and Canada, suggests that at a low estimate fifteen hundred still-births could be prevented every year in Australia by the general adoption of prenatal supervision. Evidence also showed that of the 36,288 live births in Victoria in 1922, 1,065 did not survive the first month of life—roughly about 29 per 1,000. In the whole of Australia 3,955 infants in the first month of life died in 1922. As has been said the majority of these deaths are due to prenatal or intranatal causes. The same measures of prevention that have reduced the number of still-births should bring about a corresponding reduction in the number of deaths in the first month of life. At a low estimate fifteen hundred of these 3,955 deaths could have been saved by proper prenatal supervision and proper treatment of the mother in childbirth. Such a saving in still-births and of lives in the first month of life would add approximately three thousand lives annually to the community, in addition to the maternal lives that would be saved. This presents a strong additional reason for Commonwealth assistance being given to schemes for the improvement of obstetrics, which include prenatal supervision.

4. In times past the occurrence of still-births was regarded as unavoidable. In the light of recent knowledge, an investigation of each still-birth should be made by the district medical officer of health. For this to be done, registration or notification to health authorities will be required as in England. The time allowed for registration of births in most of the States at present is too long, although the operation of the *Maternity Allowance Act* has reduced the period that elapses between birth and registration. In some of the States a *Notification of Births Act* has been passed, compelling notification to the health authority within thirty-six or forty-eight hours. This can only be applicable in towns or closely-settled districts, but we consider it would be advantageous to make it applicable in all such districts. We are also of opinion that the boundaries of registration districts should correspond with those of local authorities, as is the case in Tasmania. The Commonwealth Statistician gave reasons why this would be an advantage. If this were done at some future date whenever a scheme of district medical officers of health is introduced, arrangements could be made for registration to be made at the office of the district medical officer of health and passed on by his clerical staff to the Commonwealth Statistician's office, thus insuring the closest cooperation between the Departments of Health and Statistics.

5. We recognize that there are difficulties in the way of similar notification of earlier fetal deaths, but the loss to the nation through the foetal and maternal deaths due to abortion is so considerable that the questions should be faced by health authorities. The memorandum of the League of Nations which we have quoted states that registration as a dead-birth is required in the case of a shorter gestation than twenty-eight weeks in Switzerland (six calendar months) and in Japan (four months). It is suggested in the memorandum that the registration of births of such non-viable fetuses should be entered in a separate record, with such information as to duration of pregnancy, cause of miscarriage and other particulars as may be prescribed by a competent authority. We consider that with a scheme of district medical officers of health in personal relationship to local medical practitioners, it will ultimately be possible to introduce some system of confidential notification of miscarriages that will help to check the present waste of life.

From the First Month to the Second Year.

6. Infancy is generally understood to last until the end of the second year, but records of infantile mortality deal only with deaths in the first year. The infantile mortality in Australia has been steadily reduced during the past twenty years, until it is now the second lowest in the world, that of New Zealand being the lowest. As has been stated this fall in mortality has occurred wholly in the period between the second and twelfth month. The causes of illness in this period are almost wholly postnatal. They are chiefly nutritional disorders, due to improper feeding

or illnesses characterized by vomiting and diarrhoea, which are now recognized as being chiefly due to infections of the digestive tract. Improvement has been brought about by the careful instruction of mothers in the importance of breast feeding. Nearly all mothers can breast-feed their babies if properly instructed and if sufficient care is taken. Should a mother as exceptionally happens, prove unable to feed her baby naturally, careful training in correct methods of artificial feeding, supplies of pure fresh milk and regular supervision of the baby have prevented the occurrence both of nutritional disorders and of infections. This has been achieved by the establishment of baby health centres which are rapidly increasing in number and influence in every State. Those we visited were except as regards methods of administration all conducted on the same general principles. Premises have been provided, centrally situated and easily accessible, at which mothers attend weekly with their babies whose general condition, weight, diet are carefully recorded by the nurse in attendance. Babies are also visited in their own homes. There is a certain amount of medical supervision in most of the centres. Medical advice is not given to sick babies, who are referred by the nurse to medical practitioners or hospitals. In Brisbane we found that some treatment for minor ailments was given by nurses or by the visiting medical adviser. In two of the States (New South Wales and South Australia) special hospitals for babies suffering from gastro-intestinal disorders have been established.

7. It has been recognized that the nurses at baby welfare centres need special experience and schools for training nurses in mothercraft have been established in Sydney and Melbourne and arrangements are being made for mothercraft schools in other cities. We found three types of such schools—(a) The Tressillian School of Mothercraft in Sydney, established by the Royal Society for the Welfare of Mothers and Babies. It provides residence for trainees who must be certificated nurses and are trained for three months, and for nursing mothers with their babies, especially those who are having difficulty with breast-feeding. A few premature babies are taken in, but except for these no babies are admitted without their mothers. The trainees are instructed in methods of inducing breast-feeding and of feeding babies artificially during the process and in food values. The institution is under the control of a medical practitioner assisted by an honorary medical staff. A course of lectures is given to the trainees on the care of the nursing mother and her baby and the mothers receive instruction on the same subject. The trainees are examined at the end of their course and if successful receive a certificate. They are then eligible for appointment to baby health centres. (b) The Tweddle Hospital for Babies and School of Mothercraft, at Footscray, Victoria, was established by the Society for the Health of Women and Children of Victoria with funds provided by the generosity of Mr. Tweddle. It has accommodation for four mothers with babies, for twelve babies without their mothers and for eight residential trainees. The trainees are all certificated nurses, either general who train for four months, or maternity who train for six months. They are given a theoretical and practical knowledge of the normal baby and of the nursing, care and treatment of babies suffering from malnutrition, also of food values; and of the care and dieting of premature infants. They are also instructed in the technique of breast-feeding and in dealing with the nursing mother and her baby and the difficulties arising out of failing lactation. They are examined at the end of the course and given a certificate if they pass. (c) The Victorian Baby Health Centres Association has established a training school at South Melbourne for certificated nurses who are given a three months' course in the care and feeding of infants. These nurses are not in residence, but attend daily at the Training School or at the Foundling Hospital, where mothers and babies are in residence. Systematic lectures and teaching are given in this course by the medical officer and the matron. At the end of three months' training an examination is held and a certificate awarded to those who pass. Only certificated nurses with a special certificate in infant welfare are appointed to baby health centres.

8. The organization of infant welfare in Australia has been mainly initiated by voluntary associations who have

taken a great and increasing interest in the subject. They have been assisted by subsidies from Governments, from local authorities and by private benefactions. Where voluntary efforts cause the establishment of baby health centres and local committees are charged with some responsibility, we found that they bring into the work an element of enthusiasm which serves the useful purpose of arousing the interest of the mothers in the district. This greatly assists the nurses and not only combats prejudice and ignorance, but spreads knowledge on this subject. In New South Wales and Queensland baby health centres have been established and maintained entirely by the Government. In these instances uniformity and continuity of standards and maintenance have been brought about and the results in these respects have been advantageous, but as an educative influence in the community, they are probably not so satisfactory.

9. It is highly desirable that local authorities should take their share in responsibility and maintenance. When they do so, general interest is aroused, in the same way as by the activities of lay committees. Their contributions would relieve the heavy charge on the central administration and assist in providing for increase in the number of centres and for expenditure, which it is evident must shortly be undertaken. A generous spirit in this direction should be a matter of civic pride.

10. We consider it imperative that all such centres and all schools of mothercraft should be under responsible medical supervision. Efforts should be made to secure the sympathetic cooperation of local medical practitioners and to encourage them to make use of the facilities offered at baby health centres. It has been found in practice that women medical practitioners are specially interested and capable in this branch of work and their services should be utilized as much as possible.

11. We are of opinion that the Commonwealth should subsidize States for expenditure by them on infant welfare, provided that the methods adopted conform to standards approved by the Commonwealth Department of Health. Baby health centres should be established in all large towns. They should be supported by funds raised partly by voluntary effort, partly by local authorities and partly by subsidy from the State Government. The details of working each centre should be entrusted to a local committee, provided that such details conform to certain standards laid down by the State health administration which should also appoint a medical officer to direct infant welfare throughout the State. Special subsidies should be given to schools of mothercraft which are approved by the State administration. The work of the Commonwealth divisional director of maternity hygiene should include infant welfare until a special division of child welfare is established. He should assist in correlating the work of State health administrations in regard to infant welfare.

From the Second to the Fifth Year.

12. Up to the present this period of a child's life has received little attention from health authorities. Its importance, however, in regard to the subsequent health of the child has of recent years been increasingly recognized. Statistics show that more than half the deaths from diphtheria occur during this period. Deaths from tuberculous and other forms of meningitis during this period form a large part of the total deaths from meningitis. Whooping cough and measles are not only more fatal under five years of age, but in many cases leave permanent after effects. The evidence of school medical inspectors showed that in a large proportion of children nose and throat disease and dental defects had developed in the preschool period and were revealed by the first medical examination at school. Evidence was given as to the need in cities for more adequate supplies of pure milk for children of this age.

13. In large centres *crèches*, day nurseries, *Kindergarten* schools and Montessori schools deal with a small number of children between two and five years. But these are not primarily or principally concerned with the health of the child. They may indeed act detrimentally in times of epidemic. A special risk to children of this age is the

contraction of illness which is conveyed by infection from child to child. Some baby health centres are extending their work to include children over two years old. These children need inspection only two or three times a year to see that development is proceeding normally. It has been suggested that children of this age period should be supervised by a department of child hygiene which should extend the operations of the baby health centres to deal with children from two to five years old.

14. Under the scheme of health administration we have outlined in reference (c) ("The prevention of disease") direct infections would probably be much diminished and the risks of this age period would probably be lessened. If health districts were instituted, arrangements could be made for the periodical inspection of these children by a district medical officer of health.

15. We consider that the Commonwealth Department of Health should make an investigation into the health problems of children from two to five years of age. With the information thus gained the Commonwealth could assist State health authorities by advice and in other ways in promoting the health of children of this age period.

From the Fifth Year to Adolescence.

16. Most of the children of this age period are dealt with by the school medical inspection service which is in operation in each State, although with varying efficiency. In New South Wales a principal medical officer superintends fourteen medical inspectors, eleven travelling dental clinics, an ophthalmic travelling clinic and a staff of nurses. An effort is made to examine each school child three times during his school life. Special investigations have been made into such questions as endemic goitre and valuable records are being accumulated. An admirable example of cooperation between medical practitioners and the school medical inspectors has been set by the principal medical officer notifying the British Medical Association of intended visits of medical inspectors to any district. The Association then circularizes the medical practitioners in that district asking them to assist by giving treatment for defects found at the inspection. In Victoria a staff of eight whole-time medical officers, five dentists and two school nurses is at work. In addition four district medical officers of health make some inspections of school children in the country. The arrangements provide that the child is examined three times during school life. In South Australia there have been one medical inspector and one dental officer and one school nurse for many years. This year four additional medical inspectors have been engaged with more school nurses and provision made for systematic examinations throughout the State. In Western Australia one whole-time medical officer has been working under the Health Department with assistance from school nurses. In Queensland all the medical inspectors are part-time officers; there is no medical director or medical supervision. Several full-time nurses make the arrangements for medical inspection of different schools. A chief dental officer and several full-time dentists on his staff do dental work. In Tasmania one whole-time medical officer works in the south, another in the north and there is one part-time medical officer in Hobart and one in Launceston. All work independently of one another with no medical supervision. They are assisted by school nurses and two travelling dental clinics.

17. The school medical service deals with the school child's life in four different ways.

(a) *School environment.*—The medical inspector in most cases has little to do with school environment. Lighting, ventilation and other working conditions are generally left to the State Works Department. The sanitation of school premises is generally under the local authority and in some of the States this authority is non-effective, because Government buildings are judged to be exempt from such authority.

(b) *Outbreaks of infectious diseases in a school.*—Owing to the area each medical inspector must cover, the preliminary steps for preventing such outbreaks rest with the head teacher; consequently an infection often secures

a footing in a school before definite action is taken by medical authorities. Subsequent procedure varies. In some States control is left wholly to the local health authority; in others the medical inspection staff deal with the outbreak. In some States regulations still exist regarding terminal disinfection and closure of schools during an epidemic; in other States such procedure is discouraged. The valuable work done in New South Wales and Victoria in demonstrating the possibilities of control of diphtheria in schools by Schick tests and toxin-antitoxin injections has been mainly performed by officers of the Health Department.

(c) *Inspection for physical disease, including dental defects.*—Inspection for physical disease constitutes the chief and perhaps the most valuable activity of school medical officers. They not only discover defects and provide records of sickness, but also send notification to parents advising them to obtain treatment for such defects in their children. The procedure varies. In metropolitan areas medical treatment for all defects is easily procured through private medical practitioners, lodge medical officers, general or special hospitals, but in country towns and rural districts treatment sometimes becomes difficult, particularly as regards defects of the eye, ear, nose and throat, as in very few country towns are medical specialists dealing with these diseases to be found. In the case of dental defects, while private dentists are now distributed throughout most country districts, no dental hospital or facilities for free dental treatment existed except in capital cities until the appointment of school dentists. In some States the travelling school dentists treat school children of all ages; in others the school dentists limit their attention to children under eight years of age, but on the whole the provision for the dental treatment of children is insufficient to meet all requirements.

(d) *Inspection for mental defects.*—An endeavour is made to discover mental defects early in the child's school life by the application of special tests so that suitable instruction may be given. In many cases the testing is done by the teacher, because the medical staff is not sufficient to cope with the whole of the work. In Tasmania a very complete system of intelligence testing has been instituted, by which a psychologist supplements the medical inspection and determines the grade of the child. A psychologist has lately been appointed to the South Australian staff under the school medical director. In New South Wales intelligence testing is done by the medical staff. We consider that the necessary staff for such skilled intelligence testing should be appointed to the school medical service in each of the States.

Increased facilities for teaching children below normal mental standard are urgently required and should be provided by means of special schools or classes. Residential institutions also should be provided for cases of mental deficiency which are not suitable for education in either ordinary or special schools. Cases which are not certifiable as idiots or imbeciles, but of whose condition the diagnosis is unquestioned, should be segregated in such institutions. In Tasmania a Mental Deficiency Act was passed in 1920 and under its provisions a Mental Deficiency Board and a psychological clinic have been established. The Act gives power to establish separate institutions for mental defectives, but none have been provided owing to want of funds. As the Pensions Branch of the Commonwealth Treasury pays invalid pensions to mental defectives, the Commonwealth should be interested in any measures that may be taken to prevent their reproduction and multiplication. Segregation is one such measure and the Commonwealth might subsidize States who wish to provide institutions for the segregation and care of mental defectives.

The duties of medical inspectors of schools in some States include instruction in hygiene to the teachers who in many schools are required to give short lessons in this subject to the children. We would stress the importance of instructing children in hygiene and of keeping the teaching in accord with the most recent developments in preventive medicine.

18. In Western Australia school medical inspection is under the Health Department; in all the other States it is

under the Education Department, although originally in Tasmania it was under the Health Department. There must be advantages, presumably, in placing it under the Education Department or this would not have become the general practice. It was said that there might be difficulty of access to schools under any other arrangement and that the work would not proceed so smoothly. But the work is directly connected with health and all such activities should come under a Minister of Health. With such an arrangement public and private schools could be officially medically inspected in the same way as State schools. Provision should also be made for the medical examination and control by the Health Department of wards of the State who are under the care of special departments.

Milk for Children.

19. We have been greatly impressed during our investigation into the question of child welfare with the important part that an abundant supply of pure milk plays in the well being of the child from early infancy to adolescence. Several witnesses insisted on the necessity of quantity as well as quality of milk in the dietary of the child, not only in improving its nutrition, but in lessening the risk of its developing tuberculosis and other diseases. Evidence was given both in Adelaide and Sydney of the satisfactory results of experiments made during the past year in which half a pint of milk was added daily to the diet of children at school. The evidence showed that in the capital cities much attention is being given to the difficult problem of providing a satisfactory milk supply. Experiments have been made in various directions, but nowhere has the difficulty been met of supplying a large city with milk that is pure, both chemically and bacteriologically, at a price that enables the poorer classes to buy it freely.

We consider that if a divisional director of veterinary quarantine is appointed in the Commonwealth Department of Health as suggested by us he should pay special attention to this problem and that he should by investigation and advice stimulate efforts to deal with the question in every State.

Division of Child Welfare.

20. The foregoing analysis of the problems of child welfare makes it clear that under present conditions the health of the child is safeguarded only by State activities, voluntary and official. The health of the child determines the future health of the adult and on the health of the adult depends his capacity to discharge the obligations of citizenship, including those of defence and parenthood. The care of the health of the child ought therefore to be a national duty of the Commonwealth. It is evident that the problems of the first month of infant life should be a responsibility of a divisional director of maternity hygiene. When we consider the ever-increasing activities in regard to infant welfare, the problems of the period from two to five years of age, the necessity for coordination of the activities of the different States regarding the child of school-going age, the complexity of the situation as regards mental defectives, we are convinced that the Commonwealth should also appoint a divisional director of child welfare. His duties should include investigation of the health conditions of children of all ages, especially mental hygiene. He should advise State authorities of the results of his investigations and generally as to all questions in connexion with child welfare.

Recommendations.

We recommend that—

- (1) The Commonwealth should take the necessary steps to secure the uniform registration of still-births in Australia in accordance with the recommendations of the Health Organization of the League of Nations of April, 1925, with reference to dead-births.
- (2) In the Commonwealth Department of Health a division of child welfare should be established, whose director should investigate and advise on the health problems of child life.

- (3) The Commonwealth should subsidize States to provide additional facilities for child welfare, especially schools of mothercraft, provided that they conform to standards approved by the Commonwealth Department of Health; and also to provide institutional care for mental defectives.
- (4) It should be the duty of the Commonwealth Department of Health to promote and assist any activities of State Departments that have in view an increased supply of pure milk to infants and children.

IX.—INDUSTRIAL HYGIENE.

1. The phase of public work referred to by the term "industrial hygiene" embraces action taken for the prevention of sickness and accident in industry and aims at the guidance of the development of industry along hygienic lines and at improving generally the health conditions of the workers. Until recent years the action taken in Australia with respect to industrial hygiene has been limited to legislation concerning space, sanitary accommodation and ventilation of factories and workshops, with some restriction on the age of employees; ventilation and safety in mines and the mitigation of the larger risks of certain occupations. As a result, however, of the increase of knowledge as to the causes of ill health, the subject of industrial hygiene has received greater attention. Numerous investigations which have been made in various countries have shown that the dangers and risks of certain occupations are in many cases preventable and it is gradually being recognized that not only can a large proportion of disease, ill health and accidents be eliminated, but that production can be greatly increased by the provision of means for the protection of the worker.

Present Conditions.

2. Conferences on the subject of industrial hygiene between officials of the Departments of Health of the States and Commonwealth, with representatives of State Departments of Labour or Factories, were held in 1922 and 1924 respectively, at which the subject was considered with the view of arriving at uniformity of practice in certain respects. A number of resolutions were passed by the conference of 1922 having as their object the securing of uniform action in each State, as to the examination of employees, keeping of records, minimum age of employment, collection and publication of information, appointment and qualification of factory inspectors, legislation, morbidity statistics and provision of medical services by employers. Although it is too soon yet to expect any material change, certain recent developments have been noted. Among them may be mentioned the following: In New South Wales a Medical Officer of Industrial Hygiene was appointed in 1923 to the Department of Health for the purpose of investigating working conditions and making examinations of employees in industries and regulations under the *Public Service Act* were issued in 1924 governing the appointment of cadets and factory inspectors and outlining the educational and technical qualifications necessary for appointment and promotion. In Victoria regulations under the *Health Act* were issued in 1923 requiring notification of certain occupational diseases. In the same State a medical officer of the Department of Health was in 1923 placed for a portion of his time at the disposal of the Labour Department for the purpose of investigation of any medical condition and in October, 1925, a female medical inspector of factories was appointed to the latter Department for the purpose of exercising closer supervision over female and child workers collectively and individually. In Western Australia an amendment of the *Factories and Shops Act* was passed in 1923 in which provision was made for the regulation of factories where lead, mercurial or arsenical preparations are manufactured. In the same State the *Workmen's Compensation Act* was amended in 1924 to provide that where workers are affected by certain specified industrial diseases (twenty-three in number), they shall be entitled to compensation as if the disease were a personal injury by accident. At the same time the diseases referred to were

made notifiable. Arrangements have recently been made by the Commonwealth Department of Health with a number of firms for the keeping of records on prescribed lines and information is being accumulated for future use.

Morbidity Amongst Workers.

3. A considerable number of witnesses was examined by us on this subject. It appears from the evidence that comparatively little information is available as to morbidity amongst workers, owing to the fact that no legislation is in force requiring the notification of sickness other than certain infectious diseases or the recording of illnesses by the companies or firms concerned. An inquiry made by Dr. D. G. Robertson, Director, Division of Industrial Hygiene, Commonwealth Department of Health, into the sickness experience of 95,244 officers in various departments of the Government services of the Commonwealth and the States of Victoria and New South Wales for the years 1920-1923 showed that during those years the total number of days lost by male officers, of whom there were 70,741, was 479,685, or an average of 6.8 days *per annum* per employee. Of the female officers, 24,503 in number, the total number of days lost was 277,677 or an average of 11.3 days *per annum* per employee. The average loss of time by male and female employees was 7.9 days *per annum*. The loss of time due to epidemic or infectious diseases was 24%, injuries 21.3%, digestive diseases 21.5%, respiratory diseases 12.3% and diseases of the nervous system 8.8%.

Medical Services in Industry.

4. With regard to the provision of medical services by employers the evidence submitted by Dr. D. G. Robertson showed that from inquiries made, one company engages a full-time medical officer, twenty-one companies each employ a part-time medical officer, five companies have the services of a medical officer through medical funds and twenty-one other firms have physicians available in cases of emergency. At least twenty-two firms employ qualified nurses to look after the workers and six other firms employ unqualified nurses for this purpose. It was further stated that fifteen firms provide both an ambulance room for the treatment of injuries and a dispensary where the usual remedies are kept and that thirty-two other firms have an ambulance room and five provide dispensaries. In all fifty-two firms are known to have made some provision for the medical care of their employees.

The activities of the cooperative council of the Electrolytic Zinc Company of Australasia, Limited, in endeavouring to improve the health of the employees of the company, illustrate what can be accomplished in this direction and especially by the establishment of a dental clinic. The cooperative council of the company considered that this clinic has undoubtedly resulted in improved health conditions and concurrently has also promoted happiness and efficiency.

5. From the evidence given by various industrial medical officers it would appear that their duties vary considerably. In some cases applicants for employment are not examined before engagement; in others the conditions under which employees work are not supervised. In all cases, however, small ailments and accidents and illnesses occasioned by the employment are attended to and in some cases measures are instituted to prevent the recurrence of ill-health. In some instances the supervision by medical officers and nurses includes advice to the employees to consult their medical attendants or a dentist or to go to a hospital and as every case of ill-health is reported, the conditions of the work are examined and defects as far as possible remedied. In some firms a transfer to some other section of the establishment is arranged if ill-health is the result of standing or is due to some other special cause of fatigue.

6. Most of the witnesses on this subject were agreed that there was need for training of medical practitioners who propose to engage in industrial medical work. The majority of those now engaged in this work have gained their knowledge from experience and the suggestion was supported by several witnesses that industrial medical

training should be included among the subjects dealt with by the chair of preventive medicine, which we have recommended should be established. Several witnesses advocated propaganda among persons engaged in industrial occupations. It was proposed that among other methods short and suitably worded notices might be displayed in all industrial establishments, as is already done in some, pointing out the necessity for care and how to avoid risks and dangers.

Standards of Health in Industry.

7. The inquiry conducted by Professor Chapman into the Broken Hill mining industry, where over seven thousand miners were examined, convinced him that the hygienic standards of Europe and other countries are not applicable to persons in this country and that there is a need for an Australian standard of health. For this purpose a complete physical survey of every individual in certain industries is necessary. Up to the present medical examination has taken place only in certain industries in which there is a special risk. It would help greatly if a similar examination could be made of workers engaged in industries in which there is no special risk. Another witness, Dr. S. A. Smith, also expressed the opinion that a survey of industrial groups in Australia is essential in order to lay down standards of health in Australia. He was of opinion that the investigation should be made by a staff including an expert physiologist. Such an investigation would be a favourable starting point for a proper system of industrial hygiene in Australia and would point the way to modifications in working conditions which would tend to improve the health of men engaged in dangerous industries.

8. Comparatively little attention has so far been paid in Australia to the question of industrial hygiene. With the exception of the Broken Hill Royal Commission and of certain investigations into the health of stone masons, quarrymen, sewer miners and some branches of the clothing industry, there have been few well-defined or complete investigations to determine the industrial conditions in any industry or to correlate them to the health of the workmen.

Division of Industrial Hygiene.

9. The Division of Industrial Hygiene of the Commonwealth Department of Health was initiated in 1921, when the Rockefeller Foundation loaned an expert medical officer in industrial hygiene to the Commonwealth for the purpose. This Division has been active in several directions and has published the following valuable service publications: "The Scope of Industrial Hygiene," "Health Hazards in Industry," "Industrial Accident Prevention" which have been widely circulated. The conferences of Commonwealth and State Health officials with leading officials of the State Departments of Labour or Factories already referred to, were held at the instance of this Division. The Director of the Division of Industrial Hygiene is a member of the Advisory Committee on Industrial Hygiene of the International Labour Office and in this way close touch is kept with all developments in the field of industrial hygiene in other countries. Expert advice is available to employers and employees and the work of the Division is likely to be of great value in guiding the development of industry along hygienic lines and improving generally the conditions of the workers. Assistance has been given to State Governments in connexion with several inquiries and investigations.

10. We are of opinion that the Division of Industrial Hygiene in the Department of Health has been organized on right lines in carrying out the following activities:

- (a) the publication of service reports and information;
- (b) the collection of data on mortality and morbidity;
- (c) the encouragement of the organization of industrial welfare services, medical, dental and nursing among industrial companies or firms;
- (d) the encouragement of routine medical examination of employees;
- (e) the organization of uniform methods of records by industrial establishments;

(f) assisting State health industrial authorities and other bodies in investigations and inquiries into problems or difficulties in connexion with industrial hygiene
and that its work in these directions should be extended.

Recommendations.

We recommend that—

- (1) The work of the Division of Industrial hygiene in the Commonwealth Department of Health should be extended in the directions above indicated.
- (2) Provision should be made at Universities for the training of medical practitioners in industrial medical work.
- (3) A physical survey of individuals engaged in various industries should be made for the purpose of establishing Australian standards of health and that this should be carried out under the control of the Commonwealth Department of Health by a trained staff including an expert physiologist.
- (4) The periodical conferences between Commonwealth and State officials with representatives of Labour and Factory Departments should be continued for the purposes of insuring uniformity with respect to records and further action on various other subjects of industrial hygiene.

X.—THE ENCOURAGEMENT AND DEVELOPMENT OF RESEARCH WORK.

1. Nearly all the witnesses we have examined on the subject of research have emphasized its importance and the necessity for its encouragement and development, as underlying all advancement in public health. They deplored the lack of recognition of this fact and the consequent inefficiency of provision for investigation and the acquisition of new knowledge.

Existing Facilities.

2. The evidence indicated that limited facilities for research have been provided by both Commonwealth and State Governments, by universities, by hospitals and by the generosity of public-spirited private citizens. Many of the existing facilities in the way of laboratories, however, are so much engaged in carrying out purely routine examinations that little opportunity is afforded for research work being done in them. It must not be thought, however, that research work in health problems is limited to what can be carried out in laboratories. Much of it must necessarily be done outside laboratories, involving as it does clinical and personal study of disease in the individual, as well as the so-called field and communal investigations of disease and mortality. Evidence was submitted that very valuable original research in preventive medicine can be done and has in fact been done by private individuals acting on their own initiative and quite independently of laboratories or special equipment. We wish to emphasize this aspect of the question, because we consider that special encouragement should be given to research that may be carried out independently of well equipped laboratories.

Schemes for Developing Research.

3. While agreeing as to the need for research, witnesses differed as to details of the methods that should be adopted to develop it, as to how much money would be required for the purpose and as to how the expenditure should be controlled. Differences of opinion were expressed as to whether research in health should be carried out in connexion with universities, with hospitals or in special institutes or at all three; as to whether workers should devote their whole time to research or should engage in teaching as well, whether teachers should be freed from teaching altogether for various periods in order to carry out some special investigation or whether chairs wholly for research should be established at universities. Opinions also differed as to whether endowments should be provided for research in general with or without special institutes for the purpose or whether grants should be made to assist special inquiry into particular subjects only

proposed by individual investigators to be carried on with facilities already existing or augmented, if necessary, by funds from the special grant and as to the value of research scholarships and the conditions under which they should be established.

4. Professors MacCallum and Berry submitted an elaborate and detailed scheme for the development of research, the result of a conference with research workers and pathologists in Melbourne. The general principles of the scheme were similar to those which had been advocated by previous witnesses and these principles were also approved by subsequent witnesses. Difference of opinion was expressed as to some of the details and some of them do not appear to us to be altogether practicable. We approve of the main principles and consider that the Commonwealth Government should provide a fund in aid of research in health questions and should establish a council to administer it. Such a council, if properly constituted, would itself decide the best methods of utilizing the fund and of promoting research. Among its duties would be to control and allocate the money, to provide facilities for research workers in existing laboratories or extend them where necessary, to assist individuals in investigations on which they are engaged or which they propose to carry out, to coordinate the activities of research workers in different States or to combine workers in teams, to advise as to directions in which research is indicated and even to initiate it.

Constitution of Research Council.

5. As regards the constitution of the research council the proposal of professors MacCallum and Berry that it should consist of nineteen members, with an executive committee of six members, does not seem to us to be satisfactory. We would suggest one small body on which should be a representative of the Government who should be a business or financial authority appointed by the Governor-General in Council. The Director-General of Health should be a member *ex officio*. The other members should be (a) representatives of the Universities of Sydney, Melbourne and Adelaide, one each, nominated by their respective Faculties of Medicine, (b) three representatives of the medical profession, nominated by the Federal Committee of the British Medical Association in Australia, one of whom should be or have been engaged in research, (c) a scientist nominated by the National Research Council. The members should be appointed for a period of five years.

6. A subcommittee should be appointed in each State, consisting of the member of council residing in that State and two members coopted by him and approved by the council, to consider local researches and advise the council concerning them. If no member of council be resident in any particular State the council should have power to appoint a State subcommittee.

Research Fund.

7. It is difficult to estimate the amount of money that should be made available for the use of the council. The Commonwealth Government granted an amount of £5,000 for the year 1924-1925 for research into one particular subject, cancer. In view of the wide field covered by research in connexion with health and its immense national importance, we are of opinion that the Commonwealth would be justified in providing at least £30,000 per annum for this purpose. As it is essential that the work should be continuous, the amount should be in the form of a special appropriation or an endowment and not an annual grant.

Need for Libraries.

8. In connexion with research work several witnesses drew attention to the need in Australia of better library facilities. Existing libraries are incomplete and the distances between them make it difficult for investigators to consult literature that is wanting in places where they are working, but may be available in some distant library. Various suggestions were made, including the establishment of a comprehensive library at Canberra. In

our opinion this proposal would involve a very large and continuous expenditure and would not meet the requirements of workers in distant parts of the Commonwealth.

9. One of the functions of the research council should be to provide some means whereby research workers could study the literature of the subjects they propose to investigate. The council might appoint an official, who among other duties should compile an index of available literature, giving information as to where it can be consulted and with the approval of the council employ local agents to make excerpts and digests where necessary. The council might also make grants to libraries.

Recommendations.

We recommend that—

The Commonwealth by Act of Parliament should—

- (1) Establish a health research council constituted as detailed above.
- (2) Provide a special appropriation or endowment of £30,000 per annum in aid of health research.

XI.—THE RELATIONSHIP WHICH SHOULD EXIST BETWEEN PUBLIC HEALTH AUTHORITIES AND MEDICAL PRACTITIONERS.

1. The relationship which should exist between public health authorities and medical practitioners in regard to the prevention of disease has been considered when dealing with previous references. We have also when referring to morbidity statistics stated that medical practitioners are individually in possession of information concerning the nature, extent and causation of disease that is not made available to public health authorities or to statisticians. We have recommended that legislation should be enacted to provide that such statistics as are required should be furnished by medical practitioners to the Commonwealth Statistician.

2. Medical practitioners are among the first to come into relation with those who are affected with illness. They have the first and consequently generally the best opportunity of taking or advising steps for prevention, especially when the illness is infectious. In this regard certain legal obligations are imposed on medical practitioners. Under the *Health Acts* of the various States they must notify to the Health Department or to the local authority as soon as it is diagnosed any case that is "infectious" in the terms of the Act. In all States but one they are required to notify cases of venereal disease. In Western Australia they are required to furnish annually to the Health Department a list of all cases of tuberculosis they have seen. By the Regulations under the *Quarantine Act* if the infection is a quarantinable disease such as smallpox, they are required to notify the Commonwealth Department of Health. In some of the States the local authority accepts a medical certificate that terminal disinfection of a sick room has been performed. In Queensland they are required to certify that a typhoid convalescent is not a carrier. Under the *Vaccination Acts* they vaccinate against smallpox for the State Health Departments. In some States they are required to notify cases of industrial poisoning and industrial illnesses. A large proportion of medical practitioners also recognize obligations other than those imposed by law in this connexion and fulfil them voluntarily and gratuitously in the interests of their patients and of the community. But, as the Federal Committee of the British Medical Association in Australia stated in a report on the cooperation of the medical profession in public health, February, 1925: "In no State is the service of the practising practitioner officially utilized for the prevention of disease to any degree consistent with his knowledge and opportunity" and "any scheme to rectify existing conditions must have as its immediate ideal the linking up of the general practitioner into active participation in the administrative scheme."

3. The Federal Committee stated further that the medical practitioner "should be the unit of the medical side of the administration and should:

- (i.) Notify to his district health officer on prescribed forms (a) all births and still-births, (b) all deaths, (c) all cases of communicable disease prescribed by the regulations, (d) all cases of mineral or organic poisoning.
- (ii.) Order in writing methods prescribed by the health authority of concurrent and terminal disinfection in infectious cases.
- (iii.) Carry out the methods prescribed by the health authority for the prevention of the spread of infection by contacts or carriers.
- (iv.) Carry out medical inspection of school children in particular districts by arrangement with the district health officer and education authorities.
- (v.) Carry out other health duties as prescribed from time to time by regulations or as requested by the district health officer.
- (vi.) Be entitled to receive adequate fees."

In our opinion all the above should be included in the duties of the medical practitioner. Among the other health duties to be prescribed he should, when a death occurs in his practice in connexion with childbirth, immediately forward to the district medical officer of health a special report, giving particulars of the case. He should also furnish such returns of cases of illness attended by him as may be required by the district medical officer of health.

4. In the proposal we have suggested under reference (c) ("The prevention of the spread of disease"), for a model State health administration medical practitioners would have definite prescribed duties in connexion with public health and prevention of disease, to be carried out under the supervision of and in cooperation with the district medical officer of health. As already stated the model scheme we have proposed probably will not be brought into operation for some time and then only gradually. We are of opinion, however, that much could be done under existing circumstances by mutual agreement to bring the medical practitioner into greater participation in health administration. Evidence showed that an arrangement exists in Hobart between the Medical Officer of Health and medical practitioners, by which the local authority in a case of diphtheria pays the medical attendant a fee for each inoculation of contacts who are under sixteen years of age and supplies the necessary toxin-antitoxin free of charge.

Registration of Medical Practitioners.

5. The position of medical practitioners as persons recognized by law for the performance of particular public duties and generally speaking entitled to practise medicine and in that capacity having certain obligations imposed upon them essential in public health administration, is one which, we think, calls for consideration in this connexion in respect of their registration. The registration of medical practitioners is a function of the several States; and there are six *Medical Practitioners Acts* in Australia, each operating within the confines of the State enacting it and all differing from one another in some respects as to who is and who is not entitled to be registered. Apart from the inconvenience in health administration generally arising from the anomalies indicated, the evidence given to the Commission showed that difficulties have been experienced by the Commonwealth Department of Health owing to its officers appointed to carry out the work of the Department within the area of a State having to be registered there as legally qualified medical practitioners according to the requirements of the Act in operation in the State and having on their removal to another State to be again registered in that State.

Evidence was given that it would be an advantage if the registration of medical practitioners could be carried out by the Commonwealth instead of as at present by the several States and we would strongly urge that the necessary steps be taken to allow of this being done.

6. The determination of the relationship which should exist between public health authorities and medical practitioners is almost entirely a matter for action by the States. We cannot make a direct recommendation with regard to action to be taken by them, but as far as the Commonwealth is concerned our recommendations are as follows:

Recommendations.

We recommend that—

- (1) Legislation where necessary should be enacted to provide that such statistics as are required shall be furnished by medical practitioners to the Commonwealth Statistician.
- (2) The Commonwealth should require as a condition of subsidies to States for general health administration that their legislation should provide for the active participation of medical practitioners in local health administration on the lines we have suggested.
- (3) The Commonwealth should endeavour to arrange for the transfer to the Commonwealth from the States of their powers with regard to registration of medical practitioners.

XII.—THE RELATIONSHIP WHICH SHOULD EXIST BETWEEN PUBLIC HEALTH AUTHORITIES AND OTHER PUBLIC AUTHORITIES RENDERING MEDICAL SERVICES.

1. As regards the Commonwealth we have, under reference (a) ("The coordination of medical services of Commonwealth Departments in regard to all matters affecting public health") previously made recommendations that provide for the coordination of all its departments as regards medical services and we are not aware of any other Commonwealth public authorities that render medical services.

2. As regards State public authorities rendering medical services they are in the widest interpretation of the terms of reference so numerous and the conditions under which they carry on their functions in the several States are so varied, that we find it impossible to make any recommendations on the subject for any "legislation and administration by the Commonwealth in conjunction with the States," to which we are limited by our terms of reference.

3. Under reference (c) ("The prevention of disease") we have outlined a model scheme of State health administration in which all activities connected with health would be under a State Minister of Health, such as hospitals, maternity hygiene, child welfare, medical inspection of schools, water supply and sewerage. If such a scheme were established, the relationship between health authorities and other public authorities rendering medical services in the States would be determined by the State Minister of Health.

XIII.—THE PUBLICATION OF INFORMATION RELATING TO PUBLIC HEALTH.

1. Evidence on this subject was given by several witnesses. They were unanimous in the opinion that the education of the public in the principles of public health and personal hygiene was of importance. None of them, however, suggested methods of teaching or of publication which have not already been more or less utilized. In order that the educative effect of publications may be as good as possible, it must be borne in mind that two purposes have to be served, namely, the distribution of more or less technical information to those engaged in health work which is necessarily limited, and the dissemination of popular information to the general public which requires to be as wide as possible. In seeking to educate the general public in health matters, it is important that the information should be accurate and of so simple a character as to be easily understood. It is important at the same time to bear in mind that when information is supplied in regard to diseases, care should be taken to avoid arousing fear or anxiety in the minds of persons who are or who may believe that they are suffering from them.

Existing Methods of Publicity.

2. The Commonwealth Department of Health has published several valuable service publications on particular public health subjects or bearing on special investigations which it has undertaken. It also publishes the Commonwealth journal of health, entitled *Health* (intended primarily for the information of the officers of Health Departments) which is circulated among public officials of the

Commonwealth and States and other persons and bodies interested in health organization. Of the service publications, 1,500 copies are printed and sent to different groups of official persons and others. *Health* is issued every two months and 2,500 copies are distributed to civil authorities, various departments, members of Parliament, medical practitioners and associations with objects bearing on health; but only one hundred and eighty copies to other persons with interests bearing on health.

3. Certain of the State Departments of Health publish valuable annual reports, but their distribution is limited. All the State Departments issue booklets, posters, leaflets, placards and wall-sheets of warning, advice and instruction in reference to infectious diseases and other health subjects which reach a fairly large section of the public. Similar publicity is given by many local health authorities, varying according to the needs of their districts.

4. Numerous voluntary associations, societies and other bodies contribute to the propaganda work by the distribution of literature; and some of them organize lectures and classes for instruction. Use is also made by them of the press and the platform for health publicity purposes.

The health week campaigns held from time to time in the several States are notable examples of special efforts made by the Public Health Association of Australasia and its branches to create a health conscience in the people and to interest the people in community health and the prevention of disease. During these health weeks public meetings are held, numerous lectures are delivered by prominent public and professional men, health exhibits are shown, placards are displayed and a general effort made to reach the public by these various methods of publicity.

5. In recent years the cinema has been utilized for the direct teaching of hygiene and for stirring the imagination of people to a more intimate understanding of the problems of health and the possibilities of radio broadcasting as a channel for health propaganda work have begun to be realized.

6. We are of opinion that all these methods of publicity are useful for the advancement of public health and the prevention of disease and that they should be continued and extended. The British Ministry of Health publishes an annual report which furnishes valuable information regarding the state of the public health. Funds should be provided for the issue of a similar report for Australia by the Commonwealth Department of Health and for a more frequent issue and wider distribution of all its publications; also for procuring a central library of cinema films which could be hired by State, municipal or other activities.

7. A division of publicity should be established in the Commonwealth Department of Health which should correlate and advise as to all publicity activities and which might take into its consideration the advisability of publishing or assisting in publishing a popular journal on health.

8. Whereas a certain amount of information in regard to health and disease is published in the Australian newspapers as news cabled from England, it is occasional only, frequently of a sensational character and sometimes even misleading. We are of opinion that arrangements should be made for authoritative information to be regularly and systematically supplied by the medical officer attached to the High Commissioners' Office in London for publication in Australia.

9. A number of suggestions worthy of consideration have been made by witnesses in regard to the publication of matters concerning public health and may we think with advantage be recorded. These may be briefly indicated as follows:

Newspapers should employ medical men as correspondents in public health matters.

Reports of congresses on hygiene or on medicine in newspapers should be written by competent medical practitioners.

The Australasian Medical Publishing Company, Limited, in addition to publishing THE MEDICAL JOURNAL OF AUSTRALIA, should publish a popular health journal or magazine, the columns of which could be made available for publishing information supplied by the Commonwealth Department of Health and the several State Health Departments.

The children in schools be given teaching in hygiene weekly or even daily.

The results of medical research should be popularized by publications in magazines or newspapers in a simple and interesting form.

Legislation should be passed for compelling the observance of recognized rules of industrial hygiene in all places where large or even small numbers of persons are employed.

Bureaux of public health education should be established by the several State Governments which should carry out all the necessary publicity work for the health administration.

Recommendations.

We recommend that—

- (1) In the Commonwealth Department of Health a division of publicity and health education should be established with adequate funds to provide for a wide extension of publication of information relating to public health.
- (2) An annual report should be published by the Commonwealth Department of Health.
- (3) It should be a function of the Commonwealth Medical Officer in London to supply the Commonwealth Department of Health regularly and systematically with information on health matters in the United Kingdom and elsewhere, suitable for publication in newspapers or otherwise in the Australian States.
- (4) Subsidies and other forms of assistance should be given to the States in furtherance of their health publicity activities.

XIV.—HEALTH EXPENDITURE.

Evidence was submitted by various officials as to expenditure on health services, but we were unable to obtain satisfactory and complete statements as to the total expenditure on health in the several States. The nature of the services administered by Health Departments differs considerably in each State. For instance, in one State the Health Department maintains a number of hospitals and asylums; in another the department maintains several hospitals and subsidizes many others not under its control. In the remainder of the States expenditure on hospitals is borne by other departments. The medical inspection of State schools is a function of the Health Department in one State; in two others this work is partly carried out by medical officers of the Health Department, but mainly by the Education Department, while in the remainder it is wholly carried out by the Education Department. In five States the Health Departments incur considerable expenditure in the treatment and prevention of venereal disease. In South Australia this work is a function of another department. In several States subsidies are made through the Health Department to various voluntary associations for work in connexion with infant welfare; in others the expenditure is charged to a different department.

In these circumstances it would be of no value to endeavour to compare the cost of the health activities of the various States.

2. With regard to the expenditure of local authorities, evidence was not available from any official source as to the total amount spent on health administration by these bodies in any State. Inquiries made in twelve of the country centres visited by us showed that the total amount expended in health work was £79,982 or approximately 22% of the aggregate revenue of £364,325. The districts of these local authorities included six of the largest country centres in the States and in the evidence relating

to three of them the annual cost of sewerage was not included. The remaining six were towns of moderate size. The figures, therefore, do not represent the average amount spent by local authorities in health work. From the statements of the officials of the shires visited by us it is evident that the expenditure in sparsely populated districts is very small and totally inadequate for the needs of the residents.

We consider that all the expenditure on health in the several States should be classified on a uniform system, so that reliable information on the subject could be easily supplied.

3. We have not attempted to estimate the expenditure that would be necessary to give effect to our recommendations. We do not expect that all of them could be brought into operation at once, but even if introduced gradually, a very large expenditure would be incurred. While such expenditure would not be directly revenue-producing like that in postal services for instance, it would be reproductive directly and indirectly. We have referred to the large amount which the Commonwealth spends annually on invalid pensions for diseases that are preventable. We believe that a large proportion of this could be saved by the adoption of measures such as we have recommended. The States of the Commonwealth spend, it has been estimated, £6,250,000 on hospitals, benevolent institutions and asylums and other activities for the purpose of relieving conditions, many of which could and should be prevented. If they were prevented, much of the money thus spent could be saved. For instance, we had evidence that in Bendigo in 1923, a campaign against diphtheria was instituted. The daily number of patients in the infectious ward of the Bendigo Hospital had been as high as ninety and averaged from twenty to forty. Subsequent to the campaign the number was reduced to almost *nil* in a period of eighteen months and the diphtheria wards were closed, which had not happened for twenty-five years. Again, it must be obvious that a reduction of mental deficiency would result in diminished expenditure on courts, gaols and lunacy institutions. Expenditure in preventive measures means an incalculable saving of life and improvement of general health and efficiency, a return that is none the less real although it cannot be expressed in financial terms. We have already drawn attention to the low standards revealed by medical examinations for military purposes. Improvement in maternity hygiene and child welfare would result in improved standards of the adult later on and so provide men of "A1" class for defence purposes.

XVI.—EXPRESSION OF THANKS.

We cannot conclude our report without expressing our thanks for the courteous manner in which officials of Commonwealth Departments, State Governments and their officials, as well as those of local authorities and voluntary organizations have rendered assistance to our inquiries. Especially are we greatly indebted to the able and willing services of our indefatigable Secretary, Mr. Trathen.

XVII.—CONCLUSION.

The matters referred to us in our Commission cover so wide a field of inquiry that some aspects may appear to have received less consideration than might be expected. On most of the subjects investigated by us our recommendations have necessarily been limited by the fact that they were not matters for legislation and administration by the Commonwealth or by the Commonwealth in conjunction with the States, but for legislation and administration by States only. In regard to these subjects, therefore, our recommendations apart from an amendment of the Constitution could only be for indirect action on the part of the Commonwealth, which should consist for the most part in encouraging voluntary cooperation on the part of the States. In efforts to prevent disease it is almost an axiom that voluntary cooperation between the individual and the administration is more effective than attempts at compulsion, especially when the individuals have an intelligent comprehension of what is necessary. To secure intelligent voluntary cooperation, individuals must be educated, not spasmodically but continuously. One

means of education is a model health administration in full operation and thus the Commonwealth could supply in the Capital Territory. The present position is one in which "the immemorial contest is going on between State control and voluntary effort. If every human being aimed at the ideal there would be no need for control. If everyone was controlled, the human being would become a machine and progress would stop." We have endeavoured to make such recommendations as would provide what we hope may form a satisfactory basis for cooperation between Commonwealth and States. The successful result of any scheme that may be devised will depend not so much on its adoption by the Commonwealth as on the degree to which States and individuals who constitute the Commonwealth cooperate in an endeavour to carry it out.

We believe that the citizens of the Commonwealth will realize the need for cooperation in measures for promoting public health and individually and collectively conform to and support such measures as may be adopted, recognizing the truth of the old Roman saying: "*Salus populi suprema lex esto.*"

We have the honour to be,

Your Excellency's most obedient servants,

G. A. SYME, Chairman.
FRANK S. HONE.
ROBERT H. TODD.
JANE S. GREIG.
S. R. INNES-NOAD.

W. TRATHEN, Secretary,
Melbourne, November 30, 1925.

Reviews.

PHYSIOLOGY OF THE SEXUAL FUNCTIONS.

"An Introduction to Sexual Physiology" by Dr. F. H. A. Marshall has been sent us to review.¹ The book is written specially for biological, medical and agricultural students; it is full of most interesting matter from the first to the last page. The author deals with the process of fertilization by simple fission, by budding and by conjugation. The process of maturation is discussed briefly, as is artificial fertilization and parthenogenesis.

In the second chapter the internal and external genitals of the male and female are described and a brief outline of their histological structure given. The various factors at work in the act of copulation are set forth and reference made to the fact that the absence of orgasm in the female often leads to sterile coitions, since the female orgasm may be an essential factor in bringing about ovulation. In animals such as the rabbit and cat ovulation is a reflex act and does not occur in the absence of coition.

The mammalian sexual cycle is next considered. In the female mammal the recurrence of periods of sexual activity constitute what is termed the oestrous cycle and an interesting comparison is made with the menstrual cycle in the primates. Pregnancy, parturition, the puerperium and lactation in man are dealt with concisely and adequately.

There is an interesting chapter on the internal secretions of the gonads and the effects of castration and ovariectomy. The functions of the *corpus luteum* are considered at some length. It is held responsible for the changes occurring in the uterus and mammary glands during pregnancy; the excitatory mechanism of the ovary is inhibited until involution occurs in the *corpus luteum* towards the end of pregnancy; the ovary then takes up its duties again and excites secretion of the pituitary gland. This secretion acts upon the muscle of the pregnant uterus inducing contractions and thus producing labour.

The experiments of Steinach, Voronoff and others on

rejuvenation are mentioned, but not in considerable detail. Weismann's theory of heredity and its extension to the Mendelian theory are next dealt with and the vexed question of sex determination discussed.

In the final chapter the author deals with fecundity and shows the effect of environment in regulating the capacity to produce offspring. The effect of inbreeding the author considers is to promote homozygosity of genes and this produces uniformity of characters. Should these genes be useful and desirable, there is no better way of perpetuating them than by inbreeding.

Dr. Marshall closes this most interesting, comprehensive and valuable little book with a few remarks on the declining birth rate in man. He shows that this is what economic conditions demand and maintains that a great transition will have begun when the endeavour of civilized man to assume conscious control breaks away from the blind instinct of mere predominant survival.

A CHAPTER IN THE SEX PROBLEM.

"SEX AND EXERCISE" by Ettie A. Rout is divided into three parts, the first of which is concerned with the relation of sex to exercise, the second with the primitive expression of this relation in native dances and the third with a new system of exercises specially designed to develop the abdominal and pelvic muscles and based on observation of various native dances.

In the first chapter the author calls attention to the importance of the regular evacuation of waste material from the body as the essential factor in human wellbeing and happiness. She considers that prolonged constipation is not infrequently an actual cause of sexual frigidity and says: "The growth of pseudofrigidity in woman (and its direct consequence marital infidelity), the hysteria of many purity campaigns, the self immolation of total sexual abstinence, prudery and mock modesty generally, sex antagonism *et cetera* may all have their origin in disordered and toxic bowels."

This statement is certainly drastic; it overshoots the mark and leaves one unconvinced.

Miss Rout next compares civilized woman with primitive woman and regards the former's inferiority in sexual intercourse and in reproduction as the direct outcome of her failure to exercise and develop the muscles of the pelvic diaphragm. She calls attention to the fact that primitive peoples have designed many dances for the express purpose of developing these muscles and in the second chapter gives excerpts from Richard Burton, Henry Savage Landor, Sir Basil Thomson and others describing the war and religious dances and the dances of courtship of different native races.

This section makes interesting reading. The author has studied the question without prejudice and has attempted to cull from the eugenics of the South Seas certain principles that, properly adapted, may be of service to modern civilization. The exercises of primitive peoples, she claims, are essentially on right and natural lines, whilst those of civilized man are artificial and entirely uninspiring. She condemns our exercises consisting of a series of "physical jerks" and urges the substitution of rhythmic and undulating movement.

The book closes with an illustrated series of exercises especially compiled by the author's husband, Mr. F. A. Hornibrook, and designed to adapt the most suitable movements in the native dances to present day civilized requirements.

The book is well written, the language direct and forceful, but it is perhaps overstocked (since it is meant for the lay public) with semiscientific terms that may prove confusing.

¹ "An Introduction to Sexual Physiology for Biological, Medical and Agricultural Students," by F. H. A. Marshall, F.R.S.; 1925. London: Longmans, Green and Company. Demy 8vo., pp. xii. + 167.

¹ "Sex and Exercise, A Study of the Sex Function in Women and its Relation to Exercise," by Ettie A. Rout, foreword by A. C. Haddon, M.A., Sc.D., F.R.S.; 1925. London: William Heinemann (Medical Books) Limited. Demy 8vo., pp. vii. + 97.

The Medical Journal of Australia

SATURDAY, JANUARY 16, 1926.

The Report of the Health Commission.

A YEAR ago a Royal Commission was appointed by His Excellency the Governor-General of Australia to inquire into and report upon public health. The terms of reference were eleven in number. They were drafted in such a manner that they covered practically the whole scope of the relations between the legislature, the local authorities and the public in regard to the health, safety and well-being of the individual and of the community. Hygiene may be defined as the science and art of safeguarding the health of the nation. It embraces all measures of control applied individually and collectively of the units of the community from conception to dissociation. The Royal Commissioners were required to turn their attention to practically the whole of hygiene. The importance of such an inquiry is self-evident. But it gains in significance when it is entrusted to four medical practitioners of great ability and wide experience, men and women with exceptional power of judgement and keenness. Sir George Syme, Dr. F. S. Hone, Dr. R. H. Todd and Dr. Jane S. Greig were associated with a layman whose interests in the welfare of infants and their mothers and in other matters connected with hygiene are well known, the Honourable S. R. Innes-Noad. Added to the importance and urgency of the subjects of inquiry and to the competence of the inquirers is the highly gratifying fact that the report of the Commissioners has been issued within one year of their appointment.

In the present issue we have departed from our practice and have devoted the opening pages to this report. Attached to the report are many appendices supporting the statements made in the text of the report. The recommendations taken alone do not convey the information needed for a

full understanding of the arguments of the Royal Commissioners. We therefore recommend every medical practitioner to study the whole text of the report.

The main reference is "to inquire and report upon public health as a matter for legislation and administration by the Commonwealth, in conjunction with the States where necessary." Consequently the most important chapter of the report is that in which the Commissioners discuss the constitutional aspect of the relationship of the Commonwealth and State Departments of Health. It will be noted that they have arrived at the conclusion that the Commonwealth could not effectively carry out the functions of a Ministry of Health similar to that of Great Britain, except by devolving its powers on local authorities in the several States. Since the legislative control of the local authorities might give rise to difficulties, owing to the fact that at present the *Local Government Acts* are State measures, no proposal is made to induce the States to surrender their sovereign rights to the Commonwealth in this respect. The wording employed in the report is worthy of note, for it implies that if the States were to approach the Commonwealth spontaneously, the Commissioners would recommend that the Commonwealth should assume complete control of health legislation and administration. Throughout the report there is evidence that the Commissioners are of opinion that the safeguarding of the health of the community is in fact a proper function of the Commonwealth Parliament. That the administration of the health laws by the States has not been uniformly good is admitted. There has been repeated failure on the part of the State authorities to cooperate with the Commonwealth authority and with each other and this failure has not been advantageous to the welfare of the Australian community. The laws themselves lack uniformity and render cooperative action difficult, if not impossible. Further than this, it would almost appear that efforts to introduce uniformity and coordinated action are at times resisted by some of the States. It is obvious from what the

Commissioners record in regard to the international obligations of the Commonwealth that under certain circumstances the Commonwealth should have power to enact legislation necessary for the control in Australia of dangerous infective diseases existing throughout the world. Emphasis is laid on the largeness of Australia, but even though geographical peculiarities are responsible for difficulties in administration, the needs of the still small community must be paramount. In Australia we have a few people in a vast space; in Great Britain we have an immense number of people in a small space. If it be wise to have one central responsible health authority in Great Britain, can the existence of seven conflicting authorities in Australia be justified?

The Commissioners have manifested considerable courage in recognizing the defects of the existing systems or want of systems. They have subjected these defects to a searching scrutiny, a microscopical examination and have boldly exposed the causes. On another occasion the scheme for the cooperation of the Commonwealth and the State authorities and the proposals for the utilization of the medical profession in the endeavour to achieve better health and greater well-being throughout Australia will be examined and discussed. It is impossible to find space at present to refer to any details. Suffice it therefore to mention that the logical arguments and admirable conclusions must be regarded more or less as compromises. If it is impracticable or inexpedient in 1926 to advocate the transfer of the control of health matters to the Federal Parliament, the Department of Health of the Commonwealth should be given extended powers and every endeavour should be made to secure frank and friendly cooperation between the State Departments of Public Health and what is usually termed team work. That the services of the Commonwealth authority can and should be utilized to bring about such a desirable state of affairs is the text of the report. The sooner the recommendations are translated into action, the better it will be for the people of Australia.

A Retrospect.

Therapeutics.

The facts of today are often tabulated among the fallacies of the morrow. It is at times extremely difficult to pass a final judgement on any problem in medicine or pathology, but this difficulty is increased tenfold when the question involves the therapeutic action of a drug or other preparation. It would seem that very few medicaments have any real therapeutic value. The number of specifics is limited and many drugs whose physiological action has been determined in experimental investigations, are inert in the doses employed in actual practice.

Evidence has been collected during the year that is past in connexion with one or two relatively new drugs and several older ones. Corlette claims that heliotropine has many advantages over all other pulicicides from the point of view of reliability of action, pleasant odour and cheapness. He has made out a good case for this remedy.

In 1910 Flexner and Lewis demonstrated that acute poliomyelitis could be prevented by the early injection of human immune serum. Since then it has been found that while the serum could be used prophylactically in the laboratory, it was practically valueless in preventing the spread of the disease during an epidemic. Convalescent poliomyelitis serum has been used since 1916 in the treatment of the disease, apparently with admirable results. During the epidemic in New Zealand it proved of undoubted value when injected into the spinal theca and into the veins. The disease has appeared in Victoria and other Australian States within the past few months and a supply of human convalescent serum has been gathered by the workers at the Commonwealth Serum Laboratories. Although the stocks are necessarily limited, they are sufficiently large to cover the needs of the profession up to the present. Practitioners should remember that the serum is held in readiness for immediate use in any part of the Commonwealth.

Some interesting work on the part played by calcium in the metabolism has been carried out by several observers. Sherman and MacLeod have pointed out that calcium is as necessary for the maintenance of the body weight as fat-soluble

vitamin A. Watt has given an admirable account of the process of calcium metabolism and of the process of ossification and calcification within the body. The result of this and much other work has been to extend the employment of calcium in the treatment of disease. An investigation has been conducted for this journal on the therapeutic action of a new calcium preparation named "Tricalcine." The results appear to indicate that this preparation is of value in the treatment of tuberculosis, of angio-neurotic œdema and of asthma in children. It is certainly worthy of an extensive trial in these and a few other conditions.

Faber has recommended the use of a drug known as "Sanocrysin" in pulmonary tuberculosis. He holds that it is indicated in recent infections of the exudative type and that it may be of use in the fibrotic type of the disease. He states that its administration is followed by a severe reaction, resembling to some extent the reaction of tuberculin. It is stated also that "Sanocrysin" has a selective action on the kidneys. Its bacteriolytic action probably depends on its gold content. Whether it calls forth an immune substance as a result of the disintegrated tubercle bacilli or not has not yet been determined. Many drugs have been introduced as curative agents for tuberculosis and have been shown at a later date to be of little or no avail. It would be premature to express any opinion on the value of "Sanocrysin" at present.

The use of quinidine together with digitalis has been extended as the result of careful observation and experimentation. Recent work indicates that if administered under favourable conditions, with the patient at complete rest in bed, removed from all external noxes, quinidine acts magically in auricular fibrillation. The improvement obtained by its means can be maintained for a considerable period by the judicious exhibition of digitalis.

"Muthanol," a bismuth preparation, has yielded very satisfactory results in the treatment of syphilis. Other bismuth preparations are also useful. Bismuth will probably not replace arsenic in the treatment of syphilis, but will be found to be valuable when the arsено-benzol drugs fail or need supplementation.

The claim has been put forward that the older teaching concerning the absence of action of adrenalin when given by mouth is not always correct. It has been shown that in some patients it gives rise to vomiting, tremors and epigastric discomfort and that the blood pressure is raised.

Pædiatrics.

A considerable advance has been registered in pædiatrics during the past twelve months. In Australia there has been much discussion on the high death-rate of infants during the first month of life. Hone has examined the subject from the point of view of preventive medicine and has differentiated sharply between the natal or neonatal causes of death and the postnatal causes. The remedy for the deaths due to post natal influences are to be sought in the better management and more universal use of breast feeding and in the avoidance of infections. Helen Mayo has followed with an admirable summary of the historical development of modern doctrines on the care of infants. Margaret Harper comes next with a clear and authoritative description of the methods that have been adopted at the "Tressillian Mothercraft Training School" in reestablishing and maintaining breast feeding and in combating the effects of premature birth and of digestive disturbances in early infancy. The way has been indicated; with the proper environment and with skilled supervision the weakly and even the premature baby can be nurtured to grow into a healthy child. What can be done in a few institutions, can be imitated with more or less success on a large scale in the world. The general application of these modern methods must be demanded.

An interesting experiment has been carried out in America by the establishment of a human milk supply on commercial lines. Unfortunately the amount of human milk available through the depot is small and the cost is very high.

In regard to artificial feeding an attempt has been made to overcome the high buffer value of cow's milk as compared with human milk by raising its acidity. Davison has analysed the gastric and duodenal contents of normal infants and of those convalescent from diarrhoea. He claims that the

ordinary forms of infantile diarrhoea are caused by the failure of the duodenal enzymes and the consequent fermentation of the unabsorbed and undigested matter in the caecum and large intestine. The failure may be due to external overheating, improper dietary or infective processes involving organs or tissues other than the intestinal canal. The fermentation gives rise to irritating products which lead to excessive peristalsis. He explains in this way that infantile diarrhoea is a chemical rather than a bacterial process. The increased acidity of the gastric contents has a beneficial effect on this chemical process. It is further stated that bacteria are not destroyed by the raised hydrogen ion concentration. Davison noted that the reaction of the gastric contents has no apparent relation to the frequency with which the various bacteria are found in the stomach. On the other hand the gastric contents of raised acidity were found to form a weak culture medium. Exogenous bacteria do not flourish in it; the duodenal contents of infants whose gastric secretion was pH 5·1 to pH 5·7, were more frequently sterile than when the gastric secretion was pH 3·6 to pH 4·4.

Closely connected with the feeding of infants is the subject of vomiting of infants. Cameron has put forward the hypothesis in regard to the aetiology of vomiting due to obstruction from neuromuscular incoordination that the inhibitory apparatus is apt to lag behind the motor and augmentary apparatus in development. The failure of inhibition is most evident at the sites of the sphincters and a condition of achalasia at these points results. He includes in the group vomiting in pyloric stenosis, in obstruction at the ileo-caecal valve and in obstruction at the cardiac orifice of the stomach.

Rheumatic infection in childhood has received attention particularly in regard to the early diagnosis and the measures of the prevention of the cardiac sequelæ. Poynton has emphasized the great recuperative power of the heart in the young, provided that it is rested and protected. He has urged the establishment of country hospitals for the treatment of children who have suffered from rheumatic infection. At these hospitals prolonged rest, super-

vision and education could be carried out. Askins has dealt with the methods calculated to discover rheumatic infection at an early stage. He has also paid close attention to the curative treatment, the prevention of recrudescence and the avoidance of further advance of the disease. He has also studied the best means of enabling those patients who must become cardiac cripples, to earn their livelihood under conditions most suited to their disability. He has pointed out the school medical service, the cardiac clinic, the hospital for prolonged treatment and the vocational school each has its place in the scheme.

T. Madsen has conducted some interesting observations on pertussis. The so-called "cough-sowing" method introduced by Meyer and Chievitz for the bacteriological diagnosis of the disease was used. He found that the Bordet-Gengou bacillus can be isolated in considerable numbers during the catarrhal stage in the majority of patients and persists until the fifth or sixth week. The authorities in Denmark now permit children to attend school after the spasmodic cough has lasted for four weeks. This regulation has apparently proved to be effective.

G. F. and G. H. Dick have continued their investigations on scarlatina and have turned their attention to the causation and treatment of the disease. They claim to have obtained encouraging results from the use of concentrated scarlet fever antitoxin. It has the effect of blanching the rash, of lowering the fever and of improving the general condition of the patient. They state that if the antitoxin be given early, the course of the disease is shortened and the incidence of complications and sequelæ is greatly reduced.

Hæmorrhage of the new-born is a term employed to cover several entirely distinct processes. Apart from traumatic bleeding in infants, which does not differ essentially from traumatic bleeding in after life, the hæmorrhage may be a manifestation of some infective process, such as a pyogenic infection or syphilis. Under certain circumstances the bleeding occurs without obvious cause. Kennedy has made an important observation in this connexion. At the autopsy on an infant dead after intestinal hæmor-

rhage an ulcer was discovered in the duodenum on careful microscopical examination. The ulcer was not detected with the naked eye. At times the source of the bleeding is an ulcer of the stomach. Galbraith and Lewis have dealt with the treatment in this journal. The only measure of value is the injection of whole blood. The injections may be given into the muscles, but when the bleeding is severe, the intravenous route must be followed. No fresh light has been thrown on the pathology of the ulcerative process.

Orthopaedic Surgery.

Last year we pointed out that Royle had come to the conclusion as a result of careful observation and experimentation that ramisection had a relatively limited application as an orthopaedic expedient and that it should not be employed unless the condition to be remedied was dependent on or associated with exaggeration of postural tonus. Despite this warning the operation has been used in the absence of proper indications, more particularly in the United States of America. In these circumstances the criticisms levelled at the operation have no valid basis. For pure spastic paraplegia and allied conditions ramisection has yielded many remarkable results.

Truslow has drawn attention to a condition which he has described as *metatarsus primus varus*. It is a deviation of the metatarsal bone of the great toe due to a wedge-shaped intermesial bone or to wedging of the proximal end of the metatarsal bone. It is distinguished from *hallux valgus* by the absence of deformity of the metatarsal head, though both conditions may be present in the same foot.

Swett has made a further report on his method of treating chronic infective arthritis by synovectomy. His records indicate that he has obtained apparently good results in many patients.

A novel modification of arthrodesis of the tarsal joints has been introduced by MacLellan. The foot is split longitudinally through an incision from between the heads of the first and second metatarsal bones to the tibio-fibular joint. The incision reaches and exposes the bones. The bones are then split by means of an osteotome or saw. Arthrodesis of

the various joints is then performed in the usual manner.

In regard to the treatment of scoliosis Lovett and Brewster have devised a mechanical support consisting of a plaster of Paris jacket with sundry additions. The jacket is divided transversely and a hinge is placed opposite the apex of the curve. A turnbuckle connects the two segments. The correction is obtained by widening the gap between the two segments in gradual stages. This is effected with the aid of the turnbuckle.

An explanation of maternal birth palsy has been advanced by Pambrinudi. He finds that the movements of the sacro-iliac joints during the last months of pregnancy cause traction on the lumbo-sacral portion of the cord. The lesion is probably located in the nerve roots rather than along the course of the nerve itself.

Various attempts have been made to stabilize the hip joint in the presence of paralysis of the gluteal muscles. The substitution of the *erector spinae* for the paralysed gluteal muscles has been proposed by Kreuscher. He has performed this tendon transplantation in only one patient, but the result according to his description is satisfactory.

The problem of dealing with congenital dislocation of the hip joint has been attacked by Allison. There is often great difficulty in reducing this dislocation in elder children and young adults, owing to the resistance of the capsule and of the structures at the anterior surface of the joint. Allison carries out his treatment in two stages. In the first stage he attempts to overcome the resistance of the capsule and structures in front of the joint by dividing the anterior part of the capsule, cutting through the lesser trochanter and thus releasing the ilio-psoas and bringing the head of the femur to a position immediately above the acetabulum. Traction is then applied. In the second stage the acetabulum is cleared of all fibrous tissue and the head is replaced in the socket.

Some useful articles have appeared in this journal on the treatment of simple and compound fractures of both the upper and lower extremities. These discussions are helping to improve the anatomical as well as the functional results.

Abstracts from Current Medical Literature.

THERAPEUTICS.

Iron in Anæmia.

C. S. WILLIAMSON AND H. N. ETS (*Archives of Internal Medicine*, September 15, 1925) report some researches into the value of inorganic iron in anæmia. Rats were selected in large numbers and placed on a standard diet, the experiments were continued over some months and to insure accuracy in estimating haemoglobin of the blood the quantitative spectrophotometric method was used. Groups of healthy rats of the same age were taken and an iron poor diet given to half of each group, to the other half a diet rich in iron was given, ferrous lactate being added to the standard food. It was found that the haemoglobin content of the blood and the iron content of the liver and spleen (*post mortem*) were very slightly increased in the rats fed on the diet rich in iron. Other rats were then freely bled, up to 30% of the total blood volume being removed and they were divided into two groups and fed with iron poor and iron rich diet respectively. No difference in haemoglobin content was noted in the two groups. The rats were again bled and fed as before with no change in the rapidity of recovery, though the iron content of the livers and spleens was considerably increased in the rats fed on a rich iron diet. Dogs were bled and then treated with intravenous injections of iron and ammonium citrate. There was no greater recovery in treated than in untreated dogs. The authors conclude that inorganic iron does not hasten the return of the haemoglobin content to normal in anæmia.

Malaria.

R. Ross (*The Practitioner*, November, 1925) discusses the treatment of malaria in Britain. He points out that the few hundreds or thousands of protosporozoites introduced into the bloodstream by a mosquito bite rapidly multiply till there are thousands of millions in the whole blood volume. When 0.1 cubic centimetre of blood is examined (this being the usual amount on a blood slide) and one parasite is found, this means that there are at least thirty million parasites in the blood volume. No dose of quinine will kill more than 20% of the asexual parasites actually present in the patient when the dose is given. If each daily dose kills the same proportion, it follows that the daily dose has to be continued for at least three months before the infection is extirpated. Quinine sulphate, hydrochloride or bishydrochloride in doses of 0.6 grammes (ten grains) in solution once a day given orally before breakfast is sufficient; larger doses are not more efficacious. If indigestion

occurs a capsule or tablet is given. If for any reason this treatment does not cure, intramuscular injections of 0.9 grammes (fifteen grains) can be given, but they have no advantage over oral administration as a parasiticide and sometimes cause local mischief. Intravenous injections are useful for serious or sudden cases, but the drug given in this way has only a slightly higher parasiticidal index than when given by the other routes. Rest in bed, iron, arsenic and alcohol can be given when indicated and morphine for severe rigors. In blackwater fever quinine should be given with great caution.

Belladonna.

W. M. ROBERTS (*Quarterly Journal of Medicine*, October, 1925) records the results of some observations on the action of belladonna and neutral fats on the acidity of the stomach contents. He confirmed Bolton and Goodhart's results that the stomach contents are neutralized by duodenal reflux and finds that in complete pyloric obstruction no neutralization occurs. Further, tincture of belladonna 0.6 to 0.9 grammes (ten to fifteen minimis) or atropine sulphate 0.0006 gramme (one-hundredth of a grain) was administered ten minutes before a meal in several cases with the result that the acidity was reduced in half, but was inconstant in the remainder. The greatest reduction was in duodenal ulcer and appendicular disease in which hypersecretion occurred. It appeared from consideration of the curves of gastric acidity that the lowered acidity was due to relaxation of the pyloric sphincter with consequent neutralization by reflux from the duodenum, but this result might be due to a diminution of gastric secretion, as Bolton observed. Thirty cubic centimetres (one ounce) of olive oil or sweet almond oil was introduced in other cases after withdrawal of the stomach contents. This was followed by a gruel meal half an hour later. No constant reduction of acidity was found, but emptying of the stomach was retarded and duodenal regurgitation inhibited with a consequent rise of gastric acidity.

Magnesium Sulphate.

J. T. GWATHNEY (*The Journal of the American Medical Association*, November 7, 1925) records the results obtained by injection of magnesium sulphate simultaneously with morphine and by injecting magnesium sulphate before ether administration. From two to four cubic centimetres of a 25% solution of magnesium sulphate were injected at the same time as morphine before operation in a number of persons. On comparing the length of time before a postoperative sedative was required in these individuals with that in a number of others selected at random, in whom morphine without magnesium sulphate was injected, it was found that in the former fifteen hours elapsed before a sedative was

required, whereas in the latter the average time was only four and a half hours. Further, 0.4 to 0.6 grammes of magnesium sulphate per kilogram body weight was injected in seven patients prior to ether administration. It was found that only about one-sixth of the usual concentration of ether was necessary to produce surgical anaesthesia. An experiment with albino rats on similar lines in which the rats were introduced into an ether chamber, showed that the rats which had received magnesium sulphate, became anaesthetized quietly and lived more than twice as long as rats into which no magnesium sulphate had been injected. There is considerable evidence therefore that magnesium sulphate acts as a synergist with morphine and ether and that it renders etherization safer and quieter.

Epinephrin.

J. D. PILCHER (*The Journal of the American Medical Association*, November 7, 1925) discusses the mechanism by which epinephrin reduces the wheals of urticaria. Codeine solution (one in one thousand) was injected to produce an urticarial wheal, 0.15 to 0.3 grammes of epinephrin was injected intramuscularly with resulting quick absorption of the oedema and disappearance of the wheal. When codeine and epinephrin were injected simultaneously no modification of the wheal was noted. When codeine was injected subcutaneously after epinephrin and at the same site, an urticarial wheal appeared and was slow to fade. It was concluded that the effect of epinephrin in reducing urticaria is due to a general systemic effect and not to local blanching of the vessels.

UROLOGY.

Bladder Habits.

P. S. PELOUZE (*Journal of Urology*, June, 1925) describes various habits in regard to the act of urination which lead to actual changes in the bladder wall. Habit pseudo-atonny is caused by the fact that many people hold their urine too long, whether from habit, force of circumstances or a false sense of modesty about being seen to enter a latrine. The result is a large, pale, thin walled bladder. No symptoms arise from this condition, but, if some other urinary tract lesion calls for cystoscopic examination, the observer may be misled by the tolerance to examination and the fine trabeculation of the wall and may suspect a spinal cord lesion. On examination, however, the reflexes will be found to be normal and, moreover, a history of the habit is easily obtained. Habit pseudo-contraction is a condition that generally occurs in young men. It results from the continual dread of being caught with a full bladder with no opportunity to empty it. The victim of this "phobia" urinates unnece-

sarily often and so gradually reduces the "comfort capacity" though not the true capacity of his bladder. No trabeculation is seen on cystoscopy. The cure depends on whether or not the patient will exercise his will to hold water for longer periods. Habit trabeculation is caused by difficulty in urination when the patient is near other people. The sphincter has on this account to be forced by strong muscular contraction of the detrusor muscle. Sometimes the habit of forcing is continued even when the patient is alone and finally the bladder becomes as trabeculated as with stricture of the urethra or bladder neck obstruction.

Total Necrosis of the Kidney.

E. FALCI (*Journal d'Urologie*, December, 1924) states that total necrosis of the kidney due to renal infarction is generally consecutive to organic cardiac or vascular disease. The symptomatology is not very definite, but the occurrence may be suspected from the sudden onset, the violence, the ephemeral character and the renal localization of the pain. The pain is usually without radiation elsewhere. Of the urinary signs albuminuria is especially to be noted and in this condition it appears and disappears according as pain is present or not. Finally the previous history especially of rheumatic fever and the state of the cardio-vascular system may lead the examiner to suspect renal embolus. The prognosis is very grave, a fatal issue occurring in about 86% of cases when for some reason or other nephrectomy is not immediately performed.

Nephrostomy or Ureterostomy in Carcinoma of the Bladder.

A. DAMSKI (*Journal d'Urologie*, August, 1924) quotes cases to show that deviation of the urine above the bladder, when the latter is the seat of an inoperable carcinoma, does not always render the patient comfortable. If it so happens that there is a good deal of exudation of irritating purulent secretion from the tumour, the operation of bilateral nephrostomy or ureterostomy has the effect of depriving the bladder of the urine's diluting effect on these irritating exudations. In this way the patient may experience increased instead of decreased bladder pain. These operations are indicated only when the surgeon feels fairly sure that comparative rest to the bladder will result or when the operation serves as a preparation for total cystectomy.

Syphilis of the Bladder.

J. DE GOUVÉA (*Journal d'Urologie*, November, 1924) describes the various syphilitic lesions which may be seen with the cystoscope. Syphilitic lesions of the bladder as a rule do not cause symptoms in the secondary stage and so they are most frequently observed in the tertiary period. Gum-mata present themselves in the form

of tumours of variable size with irregular bossy surfaces often being furrowed or cerebriform in appearance. A gumma may be ulcerated or several ulcers may be seen around it and these indicate a more advanced stage of the lesion. Around each ulcer is a congested zone of demarcation. The ulcers are more or less deep and their floor is greyish or bleeding. Sometimes urinary salts encrust the surface of the ulcer and give it the appearance of a calculus. Occasionally tertiary lesions appear as papillomatous formations, often of strawberry shape and usually associated with ulcerations. Another form of tertiary lesion is leukoplakia. The plaques are whitish and have irregularly notched borders. As regards symptomatology there is nothing pathognomonic about vesical syphilis. Frequency of urination and haematuria are the most usual symptoms and vary with the site of the lesion. Painful micturition with burning and tenesmus sometimes occurs and with the advent of infection there is pyuria. Even if the patient's serum does not react to the Wassermann test, iodides and "Neosalvarsan" should be given if unusual or doubtful vesical lesions are seen. The lesions should then be reexamined at the end of one week. The therapeutic test is peculiarly valuable in these circumstances.

Cysts of the Prostate and Urethra.

MILEY B. WESSON (*Journal of Urology*, June, 1925) reports four cases of cysts of the prostate and urethra and makes a study of fifty-five cases collected from the literature. These cysts occur in the female as well as the male, as the urethral and Skene's glands together constitute the homologue of the prostate. Cysts located at the vesical orifice undoubtedly arise from the subtrigonal glands. The symptoms of cysts of the prostate may be absent or some interference with the act of micturition may be present. Retention of urine in a man under fifty, of sudden onset and relieved by the passage of a sound is indicative of a cyst. Cysts appear to be translucent through the cystoscope, if the light is behind the tumour. One of the author's patients was a woman in whom a cyst at the vesical orifice caused incontinence. The most suitable treatment is destruction of the cyst by fulguration through the cystoscope.

Paravertebral Anaesthesia in Kidney Operations.

O. S. LOWSLEY (*Boston Medical and Surgical Journal*, September 24, 1925) reports distinct success in performing forty-six renal operations under paravertebral anaesthesia. A 1% solution of "Procain" was used. No adrenalin was added and no preliminary medication was given. With the patient sitting and leaning forward a skin wheal is made two centimetres from the middle line starting below at the angle between the twelfth rib and the

vertebral column and extending up to the level of the eighth rib. A point along this line opposite the spine of the seventh thoracic vertebra is the first site of deep injection. A needle inserted at right angles to the surface will strike the angle between the lamina and the transverse process. It is then pushed over the edge of the bone, the point is deflected medially and the needle is again pushed onwards for another centimetre. The point is now near the emerging nerve roots. Suction is then applied by a syringe to make sure that the point is not in a blood vessel and then two to three cubic centimetres of a 1% solution of "Procain" are injected. This is repeated at the level of the spines of the eighth, ninth, tenth and eleventh thoracic vertebrae. The costo-vertebral angle is then infiltrated thoroughly both deeply and superficially. Finally the patient is made to lie on the side opposite to that to be operated upon and the skin, subcutaneous and muscular tissues of the entire loin are infiltrated with 0.5% solution of "Procain." All these injections are given through the first wheal made, so that the only pain felt is that of one needle prick at the beginning of the whole procedure. The anaesthetic effects were perfect in the great majority (over 80%) of the patients operated upon by the author.

Bladder Neck Obstructions.

J. R. CAULK (*Journal of Urology*, September, 1925) believes that inflammation is generally the true cause of prostatic hypertrophy. Even in the larger overgrowths drainage of the bladder either suprapublically or by catheter and incision or partial excision of portions around the bladder neck, allow inflammation to subside and so get rid of the obstruction. The author's cautery punch is used in effecting this incision or excision. At least 40% of benign bladder neck obstructions are due to various types of contracture with or without median bar formation. Drainage with the catheter and incision of the bladder neck suffice in these cases.

"Mercurochrome" as a Skin Disinfectant.

W. W. SCOTT AND J. H. HILL (*Journal of Urology*, August, 1925) realizing the highly bactericidal yet non-irritating qualities of "Mercurochrome" in quite strong aqueous solutions on the mucous membranes of the urinary tract, have prepared an alcohol-acetone-aqueous solution of the dye as a pre-operative skin disinfectant. This solution is prepared by dissolving two grammes of "Mercurochrome" in thirty-five cubic centimetres of distilled water and then adding fifty-five cubic centimetres of a 95% solution of alcohol and ten cubic centimetres of acetone. With this solution better skin sterilization is obtained than with the usual iodine or picric acid solutions. Apparently it does not cause dermatitis.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE ORTHOPAEDIC SECTION OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, 30-34, Elizabeth Street, Sydney, on October 1, 1925.

Tuberculous Disease of the Hip Joint.

DR. H. G. HUMPHRIES read a paper on the treatment of tuberculous disease of the hip joint. He said that as there was very little diversity of opinion concerning the best form of general treatment to be adopted in tuberculous coxitis, he proposed to address himself to the mechanical aspects of the treatment. Disease of the hip joint, if untreated, usually ended in cure accompanied by deformity. The limb was held in a position of flexion and adduction, the position assumed in the effort to protect the joint from jarring. Spontaneous dislocation at times occurred as a result of softening of the socket by the carious process and of enlargement of the socket by the continuous spasm of the periarticular muscles. After dislocation had taken place, healing was favoured, since the joint surfaces were no longer exposed to the increased intraarticular pressure. The final position was thus one of flexion, adduction and shortening. Flexion in ankylosis of the hip was a desirable condition at an angle of 15° to 20°, since it allowed the patient more freedom, caused less discomfort in sitting and climbing up and down stairs and made walking easier. If the flexion were greater, lordosis with apparent shortening resulted and walking became almost impossible. Adduction was always a serious deformity. It produced apparent shortening of the affected limb. The mechanical support was impaired, as the centre of gravity tended to be thrown to the outer side of the foot.

The principles of treatment consisted in the protection of the joint against injury and the establishment of a normal state of metabolism to afford immunity against further spread of the infection and to encourage the development of strong cicatricial bone. The indications were classed into means to effect healing of the diseased bone tissue, means to counteract flexion deformity, means to counteract adduction and means to counteract shortening after dislocation. A common method of treatment was the application of the plaster spica bandage. This protected the joint to some extent and counteracted flexion deformity, but it did not check adduction unless the spica was extended to enclose the thorax on the side opposite to that of the affected hip. In addition atrophy of bone as well as of muscle and other soft tissue tended to occur. Thomas's hip splint had many advantages over the plaster spica. There was less risk of atrophic changes and the apparatus was cleaner and more comfortable. It did not prevent adduction, subluxation, shortening or bone crowding. Bradford had claimed that his abduction splint had the advantages of affording traction at the early stage when the muscular forces tended to press the femur upward and backward and in the later stage when protection by use of the perineal crutch was needed to protect the joint from injury during locomotion. The Bradford abduction traction appliance was modelled on the Thomas's knee splint by combining with it an extension attachment and by adding a means of applying counter-pressure not only on the affected side, but also on the opposite side.

At the Royal Alexandra Hospital for Children, Camperdown, the Jones's abduction frame was used extensively for the treatment of hip joint disease in the recumbent stage with apparently satisfactory results. There had been much controversy concerning the relative merits of fixation, traction and weight-bearing methods of treatment. There was a growing tendency to combine these methods at different stages and in different types of hip disease. Disease commencing in the acetabulum probably required different treatment to disease starting in the head of the femur, near the epiphyseal cartilage or in the metaphysis. The fact that the disease was much more common

in the lower extremity than in the upper suggested that pressure or concussion was an important factor in the causation of tuberculous diseases of the hip. Pathological dislocation occurred more frequently when traction was not employed. It was claimed that traction not only diminished or prevented intraarticular pressure, but also contributed to the production of fixation. Traction and fixation should be continued as long as the disease was active. Weight-bearing was advocated by many on the assumption that this disease was best cured by ankylosis. There were, however, many exceptions to this rule, as was evident when recovery took place with functional use of the joint. The earlier the treatment was instituted, the better was the prospect of obtaining such results. The opponents to weight-bearing claimed that the disease retarded bone growth and functional use favoured bone growth by improving the circulation. When weight-bearing was allowed, there was more bone crowding and depression of the femoral neck, especially in primary acetabular disease. They advocated traction in the recumbent position with about 20° abduction. This could be attained by Jones's abduction frame. In about eighteen months when all the active signs of the disease had disappeared, the patient was fixed in a splint which allowed of movement, but prevented weight-bearing. This apparatus was worn for about six months before weight-bearing was allowed. If at the end of that period, there were still some signs of active disease, ankylosis should be encouraged and weight-bearing should be permitted in a plaster spica.

Wendorff, of the Lorenz Clinic in Vienna, considered that ankylosis was the most desirable end-result of the mechanical treatment of tuberculous coxitis. He insisted that the adduction contracture in tuberculous disease of the hip was a mechanical phenomenon and followed the unalterable laws of mechanics. Normally the action of the pelvi-trochanteric muscles (*the glutei maximus, medius et minimus*) was to fix the trunk on the thigh in the act of walking or standing, the angle between the pelvis axis and the thigh being a right angle. When the joint was invaded by tuberculous disease, the action of these muscles was impaired in two ways. There was absolute insufficiency from atrophy and relative insufficiency on account of the lessened distance between the origin and insertion of the muscles. The pelvis, therefore, fell to the unsupported side and adduction was produced on the affected side by the weight of the body. The treatment employed at the Lorenz Clinic was therefore planned to secure firm ankylosis. A decided stand was taken against continuous extension. In the early stages pain was relieved by simple fixation in a case applied during narcosis to secure complete muscular relaxation. Fixation was held to render weight-bearing painless. As the limb was abducted in the early stage, the boot on the sound limb was raised. The Lorenz spica was usually changed at the end of the third month. Sensitiveness of the joint arose with increasing bone destruction; this was not relieved by the short spica. The bandage was therefore augmented by a small mechanical splint made to include the leg and foot. It was fastened to the hip cast by starch bandages. It was claimed that the pain was relieved save when intraarticular abscess requiring puncture had developed. The aim of this treatment was not to press the joint surfaces together, but to make the limb relatively painless by fixation and to avoid distraction of the joint surfaces. When all manifestations of the disease had disappeared, the patient wore a leather splint support. At the end of the treatment subtrochanteric osteotomy might be necessary. In this operation care had to be exercised to divide the bone completely without interfering with the union between the thigh and the pelvis.

In addition to mechanical treatment, the patients should have the advantage of improved hygiene. Some clinicians advocated forced feeding with abundance of nutritious food. Sunlight and fresh air were essential.

Heliotherapy was a valuable addition to the treatment of tuberculous coxitis. Rollier, of Leysin in Switzerland, had approached the subject from a new point of view. His method was to expose the entire body as well as the diseased area to a tanning process, in order to stimulate all the recuperative powers of the individual. The

body was exposed in various parts to the sun until a uniform tanning was produced, after which the exposure was prolonged and the "full bath" was given.

The results of tuberculin therapy were not encouraging. Vaccine therapy might be of use in the presence of sinuses with mixed infection.

DR. C. P. B. CLUBBE pointed out that Dr. Humphries had very largely dealt with the treatment of the disease in its advanced stages. Dr. Clubbe was of opinion that the important factor in dealing with patients suffering from tuberculous disease of the hip joint was the early recognition of the disease and the commencement of treatment before the destruction of the joint surfaces commenced. When the changes in the joint were demonstrable by means of X rays, the disease was far advanced. It was a serious mistake to temporize and wait for radiographic evidence before making a diagnosis. Diagnosis in the early stage implied careful observation extending over several examinations. It was not uncommon to find a child exhibiting definite signs of irritation about the hip joint on one examination and the same child after a week's rest in bed showing no signs whatever. In cases diagnosed and treated early Dr. Clubbe had been able to obtain very good ultimate function.

DR. WILFRED VICKERS, D.S.O., referred particularly to the end results. The majority of them had been taught that the best result that could be expected was ankylosis of the joint in a good position. Treatment was consequently directed to that end. Their faith in that teaching would be seriously shaken by Rollier's figures from Leysin of patients treated by heliotherapy. The majority of the patients he, the speaker, had seen, had recovered with ankylosis. He had listened to a paper written by Rollier and read at the annual meeting of the American Orthopaedic Association in 1924. This paper had been illustrated by lantern slides of the skiagraphic appearances of the joints before and after treatment. In many instances the patient had recovered the complete use of the joint. In his book Rollier had claimed a return of function in one hundred and two patients out of a total of one hundred and fifty-eight treated in his first series and in forty-eight out of a total of one hundred and thirty patients in his second series. No other method had yielded such results. They had recently commenced to treat their patients with joint tuberculosis at the Royal Alexandra Hospital for Children by Rollier's method. This consisted in giving not merely open air treatment, but carefully regulated and graded doses of sunlight. So far the results appeared to be very promising. They had been much struck with the quick healing of large areas of ulceration. The second factor in Rollier's treatment was altitude. They did not know whether they would obtain the best results in Sydney. Possibly a hospital should be established in the Blue Mountains. On the other hand Gauvain had claimed that he had secured good results at Alton which was on the sea shore. Dr. Vickers thought that heliotherapy should be given an extensive trial in Australia.

DR. E. B. M. VANCE said that there was help to be gained by remembering H. O. Thomas's principles in two at least of the many problems that had been brought up in the discussion. In the early detection of the disease he thought three months' recumbency and fixation of a suspicious hip would suffice. At the end of this time the child should be allowed to kick round in bed, but not to walk; meanwhile he should be closely watched to see if the range of movements of the joint in all directions was increasing or decreasing. If the former, the condition was probably not tuberculous and the patient could be allowed up. If the latter it was probably tuberculous, but no great harm had been done by a few days' unrestricted movement in bed. Toward the end of the disease, when the stage of a painless ankylosis had been reached and the time had come to try the effect of discarding apparatus, it was again necessary to keep a close watch. If at the end of a few months of unrestricted weight-bearing it was seen that the angle of the joint had altered by even a slight degree, the joint was unsound and the deformity would progress slowly if the patient were left without apparatus. These facts were known to all, but the necessity for close and accurate

observation needed emphasis. He also referred to the presence of a persistent sinus two and a half centimetres below the anterior superior iliac spine as evidence of a detached femoral head; this was in his opinion about the only indication for any bone operation in children. It was the opinion of the workers at the Liverpool school that a joint which recovered with free movement, had not been tuberculous.

NOMINATIONS AND ELECTIONS.

THE undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Studdy, Albert Stuart Bradbridge, M.B., Ch.M., 1924
(Univ. Sydney), 80, Berry Street, North Sydney.

Correspondence.

DICHOTOMY.

SIR: The recent discussion of the practice of feesplitting or dichotomy is of vital concern to all who are interested in maintaining the ancient honour and reputation of our profession, whether they be the veriest tiro or the old established specialist.

It is right that those who join our ranks should expect to make a living by conscientious work and service rendered to the lay public, but any man who takes up medicine (or surgery) as a short cut to a life of ease and wealth, is either a rogue or a fool.

Surgery has cast a glamour over most students and practitioners for various reasons, chief of which are: (i.) the rapidity and certainty of cure in favourable conditions, (ii.) the pride of exhibiting manipulative dexterity, (iii.) the fulsome adulation so frequently accorded a successful surgeon by lay folk and (iv.) the large fees occasionally obtained.

Many general practitioners do a certain amount of surgery and do it well, for conditions of practice nowadays demand it of them, especially in country districts. But there should be a limit to surgery done under these conditions and it is in the realization of the limitations of their abilities and their duty to their patients that many general practitioners fall short. The very mode of life they are compelled to lead, is against them for doing major surgery and giving efficient personal attention to after treatment. Do they ever give thought as to how a successful surgeon specialist reaches his position?

I happen to be a surgeon practising in the correct street of a big city, reputed by my friends to be firmly established and possessing some skill. How has it come about? The preliminary training meant hard work right from school days, through the University and as R.M.O. at a city hospital, as well as two years abroad. Next in practice in order to earn a living as well as help fit oneself, came many years of demonstrating in anatomy, at the same time fitting in the arduous duties of a junior surgeon of a large hospital. Now being twenty years a graduate, I am a recognized surgeon earning a fairly large income, but still a student at my speciality.

Even so I find it the exception to have a patient pay what is recognized as a "full" fee. The majority of people cannot afford big fees for a specialist and it is only just that the G.P. should receive a fair remuneration for his services.

In discussing the cost of an operation it is my practice to detail all expenses likely to be incurred, such as anaesthetic, assistant or after treatment fees, hospital charges and chemist's account.

The patient then knows where he stands and if he is not in a position to meet the expense, I willingly accept his own or his doctor's estimate of the proportion of my fee that he can pay. Frequently it is only ten or fifteen guineas, but I feel that the first considerations to be weighed are: (1) the welfare of the patient, (2) to justify

the confidence and support the responsibility of the G.P. recommending my services to his patient and to see that the others helping should be rewarded proportionately for their services.

The monetary aspect by which I mean individual financial gain, should be one's last thought. Specialists should base fees on what is a fair thing for services to be rendered. I have no fixed fees and have never been guilty of charging eighty or a hundred guineas for an appendectomy or simple hernia, but some of my students have done so in their first year of general practice!

There is no doubt that the sooner some means of standardization of fees can be arrived at along with a grading of surgeons by a responsible body in whom the general public and the profession alike can place confidence, the better it will be for both patient and doctor.

I cannot believe that fee-splitting is a common sin among established practitioners or specialists, but can well conceive of it being practised by men in general practice, one of whom has leanings towards surgery. It is only from such men that I have ever received a hint or request, but on inquiry I usually found it was through ignorance of the dangers into which such practice may lead that it had been broached to me. A frank talk along the lines of my usual practice with both doctor and patient settled the matter satisfactorily to all parties.

The general practitioner cannot at the same time honestly be a surgeon specialist. If he feels competent (and knows he is so!) to treat a condition, let him do so, but not at "specialist" fees, for the services he can give are not equal to those of a specialist to the patient. Remember that a patient consults a G.P. not necessarily for treatment, but for advice and in any doubtful or unusual condition it is his duty to advise the patient how to go about obtaining efficient treatment irrespective of whether there is money in it for himself or not.

I crave apologies for such a long dissertation, but feel that nothing more briefly put would express my views.

Yours, etc.,

"SURGEON."

January 7, 1926.

CORRIGENDUM.

We desire to correct a misstatement in our review of "The Illustrated Australian Encyclopædia" which appeared in THE MEDICAL JOURNAL OF AUSTRALIA of December 19, 1925. On page 701 it is stated that the article on the botanic gardens was prepared by Dr. R. B. TILLYARD, F.R.S. The article was compiled by Mr. H. J. Carter, F.E.S., chiefly from articles by the late J. H. Maiden.

Medical Appointments.

Dr. Frank Howard Beare (B.M.A.) has been appointed Honorary Assistant Physician, Infectious Diseases Block, Adelaide Hospital.

Dr. Ida Gertrude Margaret Halley (B.M.A.) has been appointed an Official Visitor to the Mental Hospital, Parkside, South Australia.

Dr. Alfred Austin Lendon (B.M.A.) has been re-appointed President of the Medical Board of South Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xx.

ROYAL PRINCE ALFRED HOSPITAL, HONORARY MEDICAL STAFF:
Honorary Surgeon for the Department of Urology;
Honorary Assistant Surgeon for the Department of Urology.
THE QUEEN'S (MATERNITY) HOME, ROSE PARK, SOUTH AUSTRALIA: Resident House Surgeon.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.I.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Hon- orary Secretary B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudina (Central Eye's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVI- SION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

- JAN. 18.—New South Wales Branch, B.M.A.: Organization and Science Committee.
JAN. 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JAN. 26.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JAN. 27.—Victorian Branch, B.M.A.: Council.
FEB. 3.—Federal Committee of the British Medical Association in Australia: Meeting at Melbourne.
FEB. 3.—Victorian Branch, B.M.A.: Presentation of Balance Sheet, 1925.
FEB. 4.—South Australian Branch, B.M.A.: Council.
FEB. 9.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 11.—Victorian Branch, B.M.A.: Council.
FEB. 16.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 24.—Victorian Branch, B.M.A.: Council.
FEB. 25.—South Australian Branch, B.M.A.: Scientific Meeting.
MAR. 3.—Victorian Branch, B.M.A.: Branch.
MAR. 4.—South Australian Branch, B.M.A.: Council.
MAR. 5.—Queensland Branch, B.M.A.: Branch.
MAR. 11.—Victorian Branch, B.M.A.: Council.

Editorial Notices.

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